The RUBBER AGE

Published TWICE-A-MONTH at New York

Vol. 20 MARCH 25, 1927 No. 12

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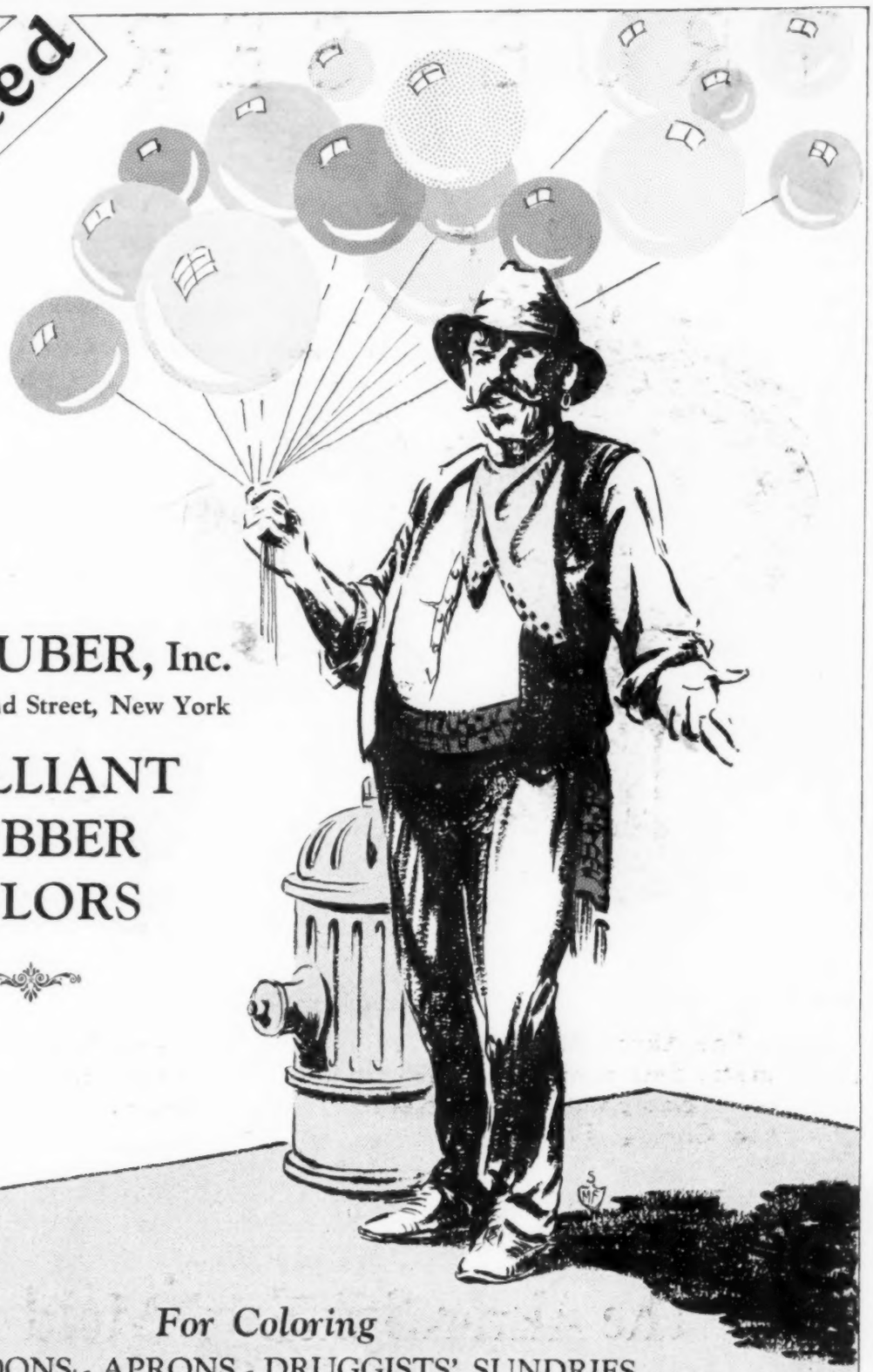

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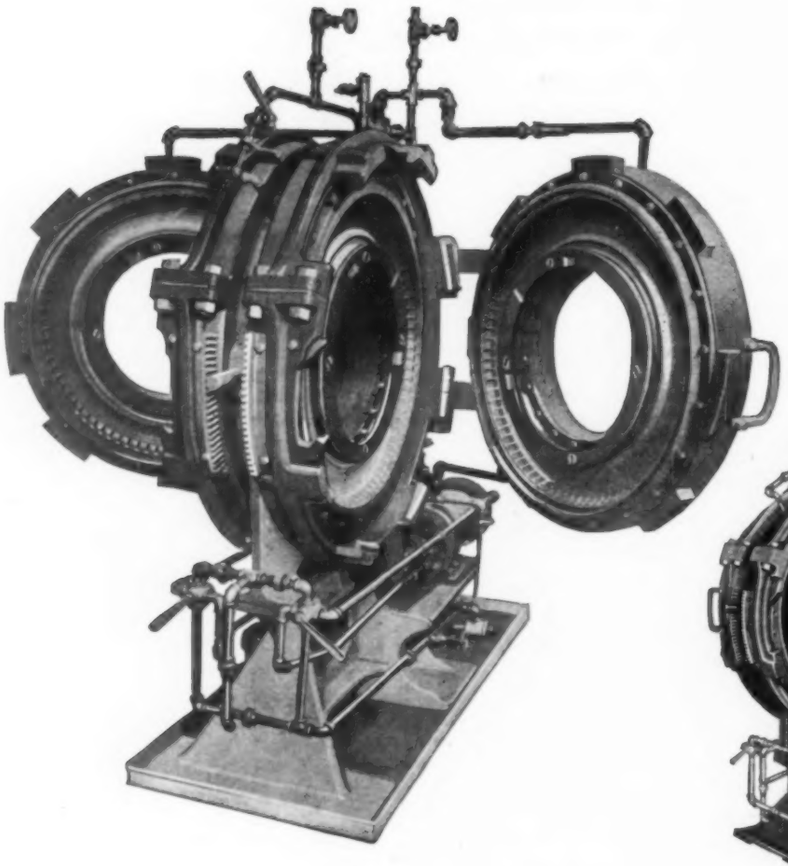
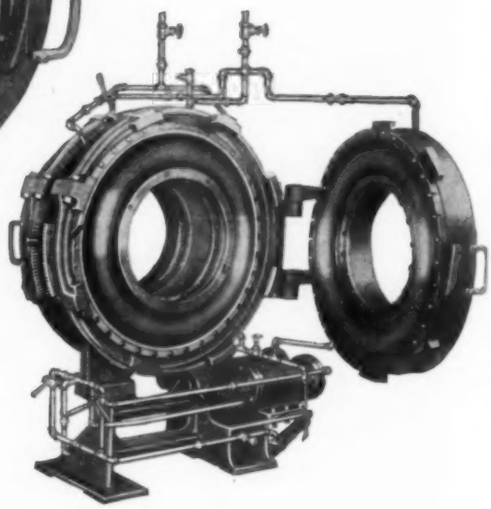


The Akron Standard Automatic Self Rimming Vulcanizer Equipped with Shells for Curing Tires.



The Same Vulcanizer Now Ready to Cure Full Molded Tubes.

The Akron Standard Mold Co.

Akron "The Established Measure of Value" Ohio

—and the result

In more than Forty Tire Factories throughout the United States and in Foreign Countries, Akron Standard Automatic Vulcanizers are daily demonstrating unequaled efficiency in reducing curing room costs, in saving valuable minutes, and in dependable, uniform curing.

There are batteries of more than 35 Units. There are other batteries of 30 Units, of 20 Units, of 15 Units, and so on down to a few single installations.

In them are being cured tires and tubes with names which are known the wide world over as symbols of quality and of service.

A steady stream of orders for more vulcanizers flows in, a great number of them being for additions to batteries now in operation.

A new factory building (the second addition in 18 months) is under construction, to provide still greater production facilities.

The sum total of such a record is this: It must be profitable for Rubber Manufacturers to use Akron Standard equipment and the services of our engineering staff, trained in rubber working as well as in metal working.

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Protect Your Profits and Your Quality

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Akron "The Established Measure of Value" Ohio

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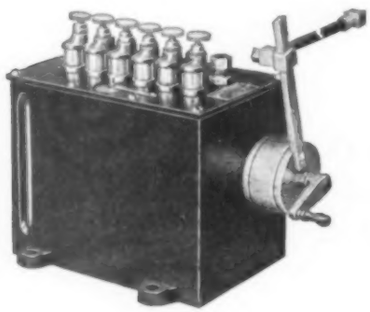

There are several descriptive circulars that tell about Bowser's complete line of lubricators, as well as all about Model T.

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The
RUBBER AGE

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A Study of the Following Data will Help You

	A	B
Rubber	100	10
Reclaim		50
Zinc Oxide	5	4
Clay		12
Whiting		14
Carbon Black		2
Mineral Rubber		5
Lime		1— 4 ozs.
Sulphur	3	1—10 ozs.
Monex	0.1	0— 2 ozs.
	108.1	100

—TENSILE STRENGTH DATA—
MOLD CURES

Stock A

Cure—Minutes Pressure—Temperature	15	20	30	45	60
5 lbs.—227°F				3000	4280
10 lbs.—239			3510	4235	4005
20 lbs.—258	3135	4065	4265	4495	3870
30 lbs.—274	4755	4520	3855	4005	3410
40 lbs.—287	4510	3885	3695	3590	3125

Stock B

Cure—Minutes Pressure—Temperature					
10 lbs.—239°F		1020	1160	1265	1215
20 lbs.—258	705	1075	1130	1115	1050
30 lbs.—274	1065	1075	1145	1020	985
40 lbs.—287	1080	1125	1085	950	940
60 lbs.—307	1080	1040	1015	910	900

This wide range of possible curing conditions shows that Monex is adaptable to a great variety of requirements.

THE NAUGATUCK CHEMICAL CO.

1790 BROADWAY
NEW YORK CITY, N. Y.

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MAR 30 '27

The
RUBBER AGE

The Only Twice-a-Month Rubber Publication

Vol. 20 NEW YORK, MARCH 25, 1927 No. 12

GROUP PLY STRUCTURE PATENT HELD INVALID

Goodyear Loses Appeal Suit Brought Against Michelin on Infringement of Patent on Group Ply Construction of Tires—Patent Expires Pending Appeal.

In a decision rendered on an appeal, handed down on March 7 by Judge Denison of the Circuit Court of Appeals, Sixth Circuit, claims 1, 2 and 4 of U. S. Patent No. 943,358 granted to P. W. Litchfield on November 14, 1909 on the group-ply construction of cord tires, were held invalid for lack of invention. The original suit was brought by the Goodyear Tire & Rubber Co., to whom the patent was assigned, against the Michelin Tire Company in the District Court of the Northern District of Ohio alleging infringement of the patent. The present decision, affirming the lower court, is the result of the appeal. Pending the appeal, the patent expired and no injunction could be issued against Michelin but the case nevertheless was reviewed on its merits by the Court.

The Group Ply System

In reviewing the case it was pointed out that the first 4-ply cord tires were built up with individual layers of cords each crossed with the next layer but Litchfield observed that the maximum crossing of the plies did more harm than good, and since the resulting high resistance to distortion depended upon the intercross ply structure, by which a group of two or three plies with parallel cords constitute a set with cords at one angle opposed to a similar set with cords at another angle.

The Court stated that it found no inventive thought in this construction and that this method of manufacture was as obvious in 1909 as it is now. As to the relative theoretical utility of the unit ply and group ply methods the decision stated, "There is no convincing evidence that either should have any greater value than the other. There are some theories of merit, in construction or operation in favor of each, but the balance is not clear."

As to whether or not the Litchfield produced tires requiring less power consumption the proof was vague, according to the Court. In regard to the contention that group ply tires could be made cheaper the Court stated that this depended on the organization of the factory, the adaptability of the machinery and the skill of the laborers.

The decision continued:

"Nor do we find any impressive public adoption and acquiescense. It is true that the Goodyear Company has sold probably ten millions of tires thus constructed, but it has taken only the natural share of the whole market to which its trade position and its six hundred salesmen entitle it. Its competitors sold many tens of millions, and we doubt whether the Goodyear sales would have been substantially less if it had used and equally pushed the single ply construction. There is no impressive acquiescence by competitors. Some of the smaller manufacturers, upon notice from the Goodyear Company that they were infringing, changed their form from group ply to single ply, but usually with the comment that they had not known of the patent and did not care which form they used, and there is reason to think that this comment might be in good faith. The largest manufacturers, excepting defendant, never used it or gave any indication that they cared to. It is an entirely reasonable inference that they thought the single ply method was upon the whole at least as good".

Record Rubber Imports

Importations of crude rubber and latex in 1926 reached the highest figure ever recorded for one year, it is shown by an analysis of import statistics made by the Department of Commerce. Total rubber imports in 1926 amounted to 925,877,712 lbs. (413,338 long tons), valued at $505,817,807 or 54.63 cents per pound. This was nearly three and one-half times the amount imported in 1916, and was an increase of more than 37,000,000 pounds over 1925.

With the exception of three years, rubber imports have climbed steadily since 1916. Due to price fluctuations, however, the values of imported rubber, while now maintaining about the same relation to quantity that they did eleven years ago, have averaged from about 16c to something over 70c from year to year. Full details appear in a table on page 617 of this issue.

Marshall Buys Knox Plant

T. C. Marshall, better known as "Tim" Marshall, has purchased the factory of the Knox Tire & Rubber Co., Mt. Vernon, Ohio, which has never been operated. He is now organizing a company and has opened offices in Akron.

ANTICIPATE INCREASE IN TIRE PRICES SOON

Messrs. O'Neil, Litchfield and Pfeiffer Agree Prices are Too Low and Expect Moderate Price Advance will be Put Into Effect in Not Distant Future.

Inasmuch as crude rubber and tire fabrics are rising in price and a heavy demand for tires is developing with the advent of spring, discussion in Akron has recently centered about the possibilities of an increase in tire prices. All executives agree that present prices are too low, when all factors are considered, and the present basis of profit is not very satisfactory to some of the rubber companies.

O'Neil Expects Increase

"Although I don't look for any sharp advances under present conditions, it seems fairly certain to me that a moderate upward revision of tire prices is due soon," said William O'Neil, president of the General Tire & Rubber Co., Akron. "Tires are cheaper per mile than they have ever been, and the margin of profit is extremely close. They are below prewar levels, which is not true in the case of other commodities. If there is any revision, it naturally will be upward. Dealer stocks are low, and I look for a rush to buy tires on the part of consumers this spring."

P. W. Litchfield, president of the Goodyear Tire & Rubber Co., Akron, also predicted higher tire prices in a talk at Boston where he attended the Automobile Show during the second week of March. "Now is the time to buy tires," he concluded. "They are selling at the lowest prices in history."

Jacob Pfeiffer, president of the Miller Rubber Company, Akron, said recently that his company is prepared to follow the lead of any of the larger manufacturers in the matter of price advance.

It is pointed out that present tire prices are about 22 per cent lower than they were at this time last year. It is now possible to equip a small car with new tires and tubes for $61. Dealers are said to be receiving a number of such orders to replace worn out tires.

SECOND ENDICOTT UNIT WILL SOON BE OPENED

One Unit of Endicott Johnson Reclaiming Plant Already Producing 12½ tons a Day and Foundations for Second Unit of Same Capacity have been Completed.

The Endicott Johnson rubber reclaiming plant at Johnson City, N. Y., will soon be in full operation. One unit of 12½ tons daily capacity has been in operation since March 1 and foundations for all heavy machinery in the second unit, which will have the same capacity, were recently completed.

The plant is located close to the heel and sole factories of the Endicott Johnson Company. It is 340 feet long by 90 feet wide, of brick and steel construction, one story in height, with a central tower equivalent to three stories, and has been designed for excellent light, heat and ventilation. It is equipped throughout with a sprinkler system.

Reclaimed rubber requirements of the shoe factories are in excess of the production of the first unit, and it is expected that with normal expansion in the departments using rubber heels and soles, the second unit will be a necessity in the near future. Ground for the plant was broken about the middle of September and the first unit was put into operation March 1. It is said to have made a good record for economical production.

Bishop Supervised Construction

C. E. Bishop, consulting engineer, Akron, Ohio, supplied the plans and specifications and the plant was constructed under his supervision. In consequence, the best machinery obtainable has been installed and laid out according to the "Bishoprocess" which provides for continuity of flow and eliminates all trucking. Material in process is conveyed from machine to machine, and from the time scrap goes to the grinding machines until the finished stock is placed on steel platforms, the conveying is done without the aid of trucks.

This reclaiming plant is the third one to be engineered by Mr. Bishop, the others being the Miller Rubber Company plant at Kenmore and the Akron Rubber Reclaiming Company factory at Barberton. Mr. Bishop was one of the original incorporators of the Akron Rubber Reclaiming Company and functioned as vice-president and factory manager until Dec., 1925, when he resigned to specialize in consulting engineering work, with offices in the United Building, Akron.

Mr. Bishop will begin a series of articles on rubber reclaiming in the April 10 issue of THE RUBBER AGE. He has followed rubber manufacturing for 26 years, 13 of which were spent in actual operations in the production of various rubber products, including golf balls, mechanicals, dipped goods, bicycle, motorcycle and auto tires, air brake, garden and suction hose, solid and cushion tires.

Mr. Bishop was in the employment of the Goodyear Tire & Rubber Co. for 13 years as superintendent of the solid tire division, and later was division superintendent in charge of its reclaiming plant. He resigned that position to assist in the organization of the Akron Rubber Reclaiming Company.

His 26 years experience is divided as follows: B. F. Goodrich Company, six years; Republic Rubber Company, two years; Alkali Rubber Company, one year; Diamond Rubber Company, two years; Dayton Rubber Mfg. Company, one year; Goodyear Tire & Rubber Co., 13 years; and Akron Rubber Reclaiming Company, one year.

J. R. Weir

SETTLEMENT IS REACHED IN MURRAY RUBBER SUIT

Judge Bodine in United States District Court on March 10 dismissed the jury which had heard testimony in the suit for $5,521,103 brought by the Murray Rubber Company, Trenton, N. J., against Sears, Roebuck & Co., Chicago, Ill., for alleged breach of contract. It was announced that the case had been settled out of court.

An agreement has been reached by C. Edward Murray, Jr., president of the Murray Rubber Company and officials of the Sears, Roebuck company, but no announcement was made concerning the amount of the settlement. It was rumored, however, that Sears, Roebuck & Co. had agreed to settle for a sum in excess of $375,000.

DAVID FEINBURG HEADS SCRAP RUBBER DEALERS

David Feinburg, of the David Feinburg Company, Boston, Mass., was elected chairman of the Scrap Rubber Division of the National Association of Waste Material Dealers, Inc., at the annual meeting March 15 at the Hotel Astor, New York. Mr. Feinburg succeeds Edward B. Friedlander, of the Lowenthal Company, Chicago.

WEIR TAKES POSITION IN RUBBER INSTITUTE

American Rubber Pathologist Who Made Amazon Survey Joins Research Group at Kuala Lumpur, Malaya—Has Been in Department of Agriculture Since 1911.

Dr. James R. Weir, whose work as a pathologist in the U. S. Department of Agriculture has made him well-known in the rubber industry, particularly since the beginning of the Government's crude rubber surveys, has accepted the position of pathologist in the Rubber Research Institute of Malaya, Kuala Lumpur, F. M. S., and will leave for his new post about the middle of April. His first period of service with the Institute will be for four years. In the Department of Agriculture Dr. Weir has been pathologist in charge of the office of pathological collections and mycological studies.

After studying at Indiana, Purdue and Harvard universities in this country, Dr. Weir graduated from the University of Munich, Germany. He served for a time as instructor at Indiana University and developed a working plan for the forests belonging to that school.

Became Forest Pathologist

On completion of his work at Munich in 1911, Dr. Weir accepted the position of forest pathologist, Office of Investigations in Forest Pathology, Department of Agriculture. He was actively engaged in that work until 1922, particularly in the forests of the northwest. After his return to Washington, where he was placed in charge of the office of pathological collections and mycological studies in the Department of Agriculture, Dr. Weir became chief pathologist with the crude rubber survey parties of the Departments of Commerce and Agriculture which visited the Amazon Valley. As a result of this work he prepared a separate report entitled "A Pathological Survey of the Para Rubber Tree in the Amazon Valley," which appeared in 1926 and has been widely studied.

After the survey of the Amazon was completed, Dr. Weir made other pathological studies in Brazil, Uruguay and Argentina before returning to the United States. Recently he has acted as pathologist for the Tropical Plant Research Foundation in connection with their work on sugar cane in Cuba. He has also studied rubber pathology in Santo Domingo, Haiti and Porto Rico. He is the author of about 100 scientific papers on pathology and agriculture and is a member of many scientific societies.

One of the last pieces of work Dr. Weir will undertake before leaving the United States will be an article on the South American leaf disease, which destroyed the rubber plantations in the Guianas, for publication in THE RUBBER AGE. In it he will offer some comments on an article which recently appeared in this journal to the effect that Hevea trees blighted by the disease some years ago now appear to have recovered.

First Photo Showing Rubber Experiments by Edison

Photo WIDE WORLD

This view on the estate of Thomas A. Edison, noted inventor, at Fort Myers, Florida, shows some of the rubber vines which he is trying to develop into an important source of American rubber. As reported in the last issue of THE RUBBER AGE, he is now working on a combination machine which will cut the vines and extract the latex by crushing. Mr. Edison feels that the experiments have proceeded sufficiently to determine that the vines, said to be *Cryptostegia madagascariensis*, will grow prolifically in Florida and the greatest need is a practical method of harvesting. The quality of the rubber is believed to be good.

TEN NEW SMALL TIRE SIZES STANDARDIZED

European-Type Automobiles Create Demand for Ten New Balloon Sizes for Rims Less than 20 Inches in Diameter—Standard Balloon Sizes Now Total 32.

The tendency toward balloon tires of small rim diameter, started with the introduction of the tiny, European-type car, has resulted within the past three or four months in the standardization of ten new tire sizes in the "sub 20-inch" size. Whereas, eight months ago there was only one tire size of rim diameter less than 20 inches, that of the 27x4.40, which fits a rim 18.20 inches, there are now 11 sizes in this class.

All of the following standard balloon sizes are intended to fit rims less than 20 inches in diameter: 27 x 4.40; 28 x 4.75; for rim diameter of 19 inches; 28 x 4.95, rim diameter 19 inches; 31 x 6.75, rim diameter 19 inches; 28 x 5.25, rim diameter 18 inches; 29 x 5.25, rim diameter 19 inches; 30 x 6.00, rim diameter 18 inches; 31 x 6.00, rim diameter 19 inches; 31 x 6.20, rim diameter 19 inches; 30 x 6.75, rim diameter 18 inches; 30 x 6.20, rim diameter 18 inches.

According to the Miller Rubber Company, Akron, the actual sectional width of these tires is no less and the type of construction is just as heavy as in tires of larger rim diameter. The change is merely in the diameter of the rim they will fit.

Introduction of the new sizes has increased the number of standard passenger car full balloon sizes to 32 since the middle of 1926. This has made necessary a change of equipment at tire factories and has put rubber companies to considerable expense.

Although several new sizes have recently been placed on the market as original equipment on new cars, no sizes have been eliminated in passenger car balloon sizes. Thus, in order to satisfy his customers, the tire dealer must be prepared to keep on hand a considerably greater variety of sizes than he did eight months ago.

COTTON CONSUMPTION LARGER IN FEBRUARY

Consumption of cotton in the United States during February totaled 590,447 bales, against 565,118 bales in the same month last year, according to figures just released by the Census Bureau. The figure includes 17,250 bales of Egyptian, 5,764 bales of other foreign cotton and 1,716 bales of American-Egyptian.

Stocks of cotton on hand at the end of February were considerably heavier than on the same date a year ago, totaling 1,933,077 bales in consumers' hands and 5,443,820 bales in public storage and at compresses. On Feb. 28, 1926, stocks on hand consisted of 1,832,655 bales in consuming establishments and 4,740,450 bales in public storage and at compresses.

The number of spindles in operation in February was 32,872,102, against 22,009,138 in the same month in 1926.

Figures on linters not included show 60,336 bales consumed in February, against 54,403 consumed in February, 1926.

COMPLETE ADDITION TO GATES RUBBER FACTORY

Construction work on an addition to the factory of the Gates Rubber Company, Denver, Colo., has been completed and the installation of equipment is now in progress. About 30,000 square feet of floor space in the new building will be devoted to the manufacture of braided garden hose, and this department will be operating at capacity by April 1.

In addition to making tires and several grades of wrapped and braided garden hose, the Gates company also produces radiator, air, steam, welding, air brake, air signal and other types of hose. The new unit will have a capacity of over 26,000 feet of hose a day.

The company reported an increase of 26.5 per cent in sales of mechanical rubber goods and an increase of 232 per cent in export sales for the first quarter of the fiscal year, ended March 1. Growing business in Spanish-speaking countries has made necessary the publication of a 40-page catalog in that language, of which 5,000 copies are being sent to Latin American countries. January and February sales of fan belts and radiator hose were 14.75 per cent greater than any previous two months in the history of the company.

Corrugated Plant Sold

The factory of the defunct Corrugated Rubber Company on Violet Ave., Poughkeepsie, N. Y., has been sold to the Poughkeepsie Chemical Company, a new organization which has also acquired the assets of the Ross Chemical Company, formerly at Highland, N. Y.

KENNEDY TELLS ABOUT GOODYEAR CONTRACT

Many Testify in New York in Goodyear Litigation, but Leonard Kennedy Supplies the Most Interesting Details Concerning his Management Contract.

The greater part of the testimony which has been taken before a notary public in New York to be introduced in the Ohio courts in the litigation involving the Goodyear Tire & Rubber Co. has concerned the management contract with Dillon, Read & Co. engineered in 1921. The most interesting testimony was supplied by Leonard Kennedy, head of Leonard Kennedy & Co., New York, who revealed that the contract signed in May, 1921, was the only one of magnitude which his firm undertook and that it ceased operations about a year ago.

Mr. Leonard told of interesting A. A. Schlesinger, Milwaukee capitalist, in his plan for a management company. E. G. Wilmer, one of Mr. Schlesinger's most promising associates, was chosen as president of the Goodyear company. The Kennedy-Goodyear contract provided for annual payments of $250,000, plus a 5 per cent share in all Goodyear profits in excess of $10,000,000, but the Kennedy company paid Mr. Wilmer's salary of $50,000 a year.

Hughes Now Chief Counsel

Charles Evans Hughes, former Secretary of State, and Emory Buckner, United States Attorney, took active charge of defense for Dillon, Read & Co., following the departure of George W. Wickersham, former Attorney General, for Europe.

Frank A. Seiberling testified in Federal Court at Toledo March 9 that he refused to accept an opportunity to make millions by turning down the offer of Dillon Read "to validate the management stock which they control."

The financial condition of Goodyear in 1920 and 1921 was described by Thomas Jackson, a member of the accounting firm of Price, Waterhouse & Co. and for several years treasurer of Goodyear. He testified in New York that a banking syndicate headed by Goldman, Sachs & Co., New York, provided $25,000,000 in credit but the move was fruitless. He estimated that the company was short $50,000,000 when Dillon, Read & Co. became interested in May, 1921.

E. G. Wilmer, president of Dodge Brothers, Inc., and former president of the Goodyear company, testified March 17 as to conditions in the company when he became its chief executive on May 13, 1921. "Creditors were legion," he said. "Any number of them were living in Akron. Daily cash requirements were virtually budgeted. It was quite impossible for the executive officers to find $300 for disbursement. The lowest morale existed in the Akron organization because of the uncertainty of the situation." Mr. Wilmer also described how the depression of 1920 affected the company, leaving it with huge commitments for raw materials at prices far above the falling market.

J. C. TREADWELL

Head of the Government's Crude Rubber Survey in Northern Tropical America, the Report of which has just been Published and is Reviewed on Page 605 of this issue.

BERGOUGNAN FACTORY AGAIN CHANGES HANDS

The Citron-Byer Company and the Bergougnan Realty Corporation have signed contracts for the sale of the factory of the defunct Bergougnan Rubber Corporation, Trenton, N. J., to Brewster Grace, of Philadelphia, acting for another purchaser whose name was not disclosed. The consideration was not announced, but the factory has been held at $200,000. It was sold at public auction a few months ago to the Citron-Byer Company and the newly-formed Bergougnan Realty Corporation for about $115,000 by Charles E. Stokes, receiver for the rubber company.

The purchase included all the real estate, amounting to more than nine acres, and all the factory buildings, the replacement cost of which is said to be in excess of $500,000. Title to the property will be transferred to the new purchaser in the near future by Receiver Stokes, as the first sale was confirmed by the United States District Court only recently.

Will Increase Acreage

In his annual report to stockholders of the Intercontinental Rubber Company George H. Carnahan, president, stated, "The future importance of cultivated guayule to the rubber and automobile industries in general is receiving gratifying recognition, and it may be fairly assumed that our company will receive merited benefits from its 15 years of pioneering."

It was stated in the report that at the end of 1926, the company had 2,722 acres being tapped in Sumatra and 223 acres of new rubber trees planted, bringing the total planted area up to 4,147 acres. A further 250 acres are to be planted in 1927, and an additional 700 acres of older trees brought into tapping operations.

TIRE SHIPMENTS MAKE BIG GAIN IN JANUARY

Rubber Association Reports Increases in Inventories and Shipments of All Types of Tires—Inventory of Tubes Continues to Decline in January.

Tire shipments in January, according to the tire statistice of the Rubber Association of America which were released on March 15, were 65 per cent greater than in January, 1926. Although some increase had been expected, the trade was surprised to find how much the shipments had gained in the first month of the year. Since the entire country appears to have been treated to an unusually early spring, it is thought that the tire dealers will have no trouble in moving promptly the larger stocks which they have ordered. The exact number of tires shipped from the factories in January was 4,932,163, this figure being on a 100% basis; as issued, the Rubber Association's figures are only 75% representative of the industry.

Production of tires of all types showed some increase in January also. The total number was 4,965,183 as compared to 4,720,768 in January, 1926. Inventories at the end of that month constituted an average stock of only 2.1 months supply.

Inner tube production in January amounted to 5,336,755 tubes. Shipments stood at 6,016,364 tubes which was a distinct gain over November and December. Inventories declined slightly to 15,585,161, all of these figures being on a 100% basis. The inventories of tubes were equal to 2.6 months supply at the rate at which they were shipped in January.

In the non-pneumatic classes, the January output was 48,259 solids and 8,665 cushion tires. In producing the pneumatic and solid tires and inner tubes in January the industry used 19,144,552 pounds of cotton fabric and 58,771,297 pounds of crude rubber. Detailed figures, on a 100% basis, follow. Figures for past months are shown in the statistical section in back of this issue.

JANUARY, 1927, TIRE STATISTICS—100% BASIS

Casings—	*Inventory*	*Production*	*Shipments*
Balloon	4,159,017	2,391,704	2,392,831
H. P. Cord	5,422,680	2,381,205	2,325,958
H. P. Fabric	850,363	192,274	213,374
Total	10,432,060	4,965,183	4,932,163
Inner Tubes—			
Balloon	5,303,631	2,454,622	2,630,203
H. P.	10,281,530	2,882,133	3,386,161
Total	15,585,161	5,336,755	6,016,364
Solids	181,796	48,259	44,987
Cushion	36,384	8,665	9,787

Goes on Five-Day Basis

Production at the factory of the Firestone Footwear Company, Hudson, Mass., recently went on a five-day-a-week basis, eight hours a day for all departments except tennis shoes, which has a full day and Saturday off. The change applies to both night and day shifts. Virtually all goods now being manufactured are being placed in stock. About 1,500 employees were affected.

The Mandrel for Round Tubes

Small diameters and large cross sections have changed inner tube manufacturing methods.

Circular cured ring shaped tubes eliminate wrinkles and are not stretched to fit but made to fit the casing.

That means no pinching and longer wear.

The trade are demanding round tubes. The circular mandrel makes them round without any change in your present equipment.

We will be pleased to send you full information on the use of Circular Mandrels.

THE CLYDE E. LOWE CO.

2976 East 81st Street Cleveland, Ohio

CURVED ECONOMY CALENDER SHELLS MANDRELS

CANADIAN GOODYEAR MAY CHANGE CAPITAL

Stockholders will Vote on Consolidating Prior Preference and 7 Per Cent Preferred into One Issue, and on Changing Common into No Par Value Stock.

At a special meeting on March 28 directors of the Goodyear Tire & Rubber Co. of Canada, Ltd., Montreal, will submit a proposal to its stockholders providing for a rearrangement of its capital structure. It is proposed to consolidate the 6 per cent prior preference and the 7 per cent preferred stocks into a single issue, which will be callable at 110, and to change the par value of the common stock from $10 to no par. No new financing is under consideration. After the proposed change is made the new issue will be the senior stock of the company.

C. H. Carlisle, president, in commenting upon the contemplated arrangement of capital structure, stated that over 90 per cent of the 7 per cent preferred stock is held in Canada, while the majority of the 6 per cent preferred is held in the United States. He offered as his opinion that the suggested rearrangement was in the interest of both classes of shareholders. He said that the company had outgrown its former position and that the change was desirable according to the unanimous judgment of the board of directors. The prior preferred stock outstanding amounts to $3,449,800 and the 7 per cent preferred amounts to $4,500,000.

The amount of common stock outstanding is $533,200, consisting of 53,320 shares of $10 par value. When the proposed change is approved there will be the same number of shares outstanding. The new preferred issue will pay 7 per cent.

NEGOTIATES CONTRACT OCEAN FREIGHT RATES

Special contract rates to cover goods moving from the United States to Continental European ports during 1927 have been negotiated by the Traffic Committee of the Rubber Association of America with the steamship lines concerned. All rates on general merchandise have been increased from 15 to 20 per cent and the contract rates available to shippers of rubber goods are considered very favorable. Contract rates are lower than general merchandise rates by the following percentages: Tires and tubes, 7%; Footwear, 30%; mechanical goods, 20%; and all other goods, 10%.

Ashland to Reopen

At the annual meeting of the Ashland Tire & Rubber Co., Ashland, Ohio, all directors were reelected. It was announced that the factory would resume operation April 1. The Ashland company is leased and operated by the Mansfield Tire & Rubber Co., Mansfield, Ohio.

V. A. PARKER
Mold Engineer Now With the Bridgwater Machine Co., Akron in the Engineering and Sales Division.

GENERAL SALES GAIN 150 P. C. IN QUARTER

William O'Neil, president of the General Tire & Rubber Co., Akron, declared recently that the rubber industry in general and his company in particular is showing signs of unusual prosperity. During the three months ended Feb. 28, the General company reported a gain of 150 per cent in sales when compared with the same quarter a year ago. Production will be increased to catch up with orders.

Mr. O'Neil, accompanied by Howard Smith, western sales manager, Frank Gabl , of the factory, and Harry Quine, of the advertising department, recently returned to Akron from a trip to the Pacific Coast where they conducted sales conferences in Seattle, San Francisco and Los Angeles.

Miller Declares Dividend

The Miller Rubber Company, Akron, has declared a quarterly dividend of 50 cents a share on common stock of no par value. It is payable April 25 to stockholders of record April 5.

Resume Night Operations

The Continental Rubber Works, Erie, Pa., has called back some of its employees on the night shift, according to an announcement by Theron R. Palmer, president and general manager. Other employees will be brought back as soon as operations warrant it.

Fidelity Tire Organized

The Fidelity Tire & Rubber Co., Chicago, Ill., has been incorporated with an authorized capital of $375,000 to manufacture tires. Incorporators are H. G. Forde, G. Fries and M. J. Weller, all of 11 So. La Salle St., Chicago.

LEE REPORTS NET LOSS OF $1,670,068 FOR 1926

The Lee Rubber & Tire Corp., New York, with factories at Conshohocken, Pa., reports a net loss for 1926 of $1,670,068, after expenses, depreciation, interest and inventory adjustment. This compares with a net income of $300,208, or $1.39 a share on 214,837 shares of no par value outstanding in 1925.

Net sales of $12,213,076 in 1926 compare with $12,742,585 in 1925. The consolidated balance sheet, as of Dec. 31, 1926, shows current assets of $6,167,950, compared with $7,980,746 on Dec. 31, 1925. Current liabilities of $3,400,947 compare with $4,367,303. At the end of 1926 net working capital was $2,767,003, against $3,613,443, as of Dec. 31, 1925.

LEE RUBBER & TIRE CORP.
Consolidated Balance Sheet,
December 31, 1926.

ASSETS

	1926	1925
Cash	$1,015,860	$871,458
Trade accepts.	75,033	115,047
Notes rec.	78,177	64,717
Accts. rec.	1,550,355	1,984,164
Invents.	3,287,267	3,835,555
Mdse. in transit	127,343	1,088,435
Wkg. fd. at brches.	21,540	19,470
Empl. stk. option deposits		48,309
Loans & adv. employs	12,374	1,900
Trust, of cash fund	517	1,103
Invests.	139,177	73,698
Def. chgs.	78,573	60,104
Plant & equip.	7,018,233	6,862,278
Prepaymts.		7,973
Pats. & trmks.	34,447	42,714
Total	$13,438,896	$15,076,925

LIABILITIES

Notes pay.	$2,300,000	$2,000,000
Banks. accepts. pay.	634,491	797,499
Accts. pay.	300,835	1,393,841
Misc. accrls.	165,622	175,963
Trustee cash fund	517	1,103
Res. adj. tire clms.	65,250	58,591
Depreen. res	2,479,322	2,369,437
Conting. res.	36,613	82,341
Misc res.	13,270	26,625
*Dec. cap.	1,500,000	1,500,000
Cap. surpl.†	5,355,384	4,418,591
Mtge.		
Surplus	587,594	2,253,294
Total	$13,438,896	$15,076,925

**In accordance with the stock corporation law of the State of New York. †Includes 300,000 capital shares.*

DAYTON REPORTS GOOD PROSPECTS FOR YEAR

John A. MacMillan, president of the Dayton Rubber Mfg. Company, Dayton, Ohio, states that business of his company in January and February was treble that done in the same two months last year.

"Our business thus far this year," said Mr. MacMillan, "goes a long way to confirm my conviction that the Dayton Rubber Mfg. Company will have by far its greatest and most profitable year in 1927. Conditions in the industry as a whole are much better. The rubber market and rubber prices are more stable, and definite steps have been taken by the industry to prevent economically unsound rubber price fluctuations which characterized 1926."

MERGER RUMORS AGAIN DENIED BY GOODRICH

Reports that General Motors is Seeking Control of Company Firmly Denied by B. F. Goodrich Officials—Strength of Stock Attributed to Good Prospects.

Officials of the B. F. Goodrich Company, Akron, emphatically deny reports that the General Motors Corporation is seeking control of the company. Rumors to this effect have been persistent despite repeated denials by the Goodrich company and have been given additional weight by the fact that Goodrich common stock has been unusually strong and active. It is claimed that no negotiations looking to a consolidation are under way between the two companies, and the strength of the stock is attributed solely to the good prospects of the Goodrich company.

Substantially better earnings are expected in 1927 than were reported for last year, when net profit after all charges and taxes, was $5,065,110, or $4.64 a share on the 601,560 shares of no par value common stock outstanding. The poor showing made was due largely to the reduction in crude rubber prices, which caused severe inventory losses and offset the satisfactory profits that would have resulted from the large volume of sales.

Every indication points to the fact that sales this year will continue at a high rate and keen observers both in the rubber industry and in outside financial circles seem to be unanimous in the opinion that no great losses will be suffered on crude rubber inventories this year, as the market has become fairly well stabilized. This should enable the B. F. Goodrich Company to earn substantially larger profits than in 1926, although it is not expected that the income will reach the unusually high figure of 1925, when net of nearly $13,000,000, or more than $17 a share was reported. A conservative estimate would place the company's income this year at over $8,000,000, or $10 a share on common stock.

The B. F. Goodrich Company manufactures a diversified line. Although tires represent the bulk of its products, footwear and mechanical rubber goods are also important contributors to earnings. These proved particularly valuable last year, when they helped materially to off set the poor showing on tire operations.

Late Stock Prices

	Last Price		1927	
	Mar. 17	Mar. 3	High	Low
Ajax	12¾	—	12¾	9
Firestone	127½	128	128	117
do 6% pfd.	104	104	104¼	101½
do 7% pfd.	100	99	100	98½
Fisk	18½	17⅝	18½	16
do 1st pfd.	100⅜	85	100½	81
General	145	149	150	145
do pfd.	105	99¼	105	99¼
Goodrich	58½	54	58¾	42¾
do pfd.	103	99¼	103⅛	95
Goodyear Com.	37	37	37	29½
do pr. pfd.	107¾	107	108⅞	104½
do pfd.	102½	101½	102½	98½
Hood	—	42½	47	42½
India	28	29	30	28
Intercontinental	14¾	14	15¾	11½
Kelly Springfield	18¾	11	20¾	9½
do 1st pfd.	65	48⅛	67	44
do 8% pfd.	65	46	67⅛	35
Lee	8½	—	9	7
Miller	35	33	36⅜	32
do pfd.	—	101	104	100
Mohawk	15	15	25	15
do pfd.	65	65	65	65
Seiberling	24	22½	24	21⅜
do pfd.	100	97½	100	96
Star	—	4	5	4
U. S. Rubber	64¾	64⅛	67⅛	57⅝
do pfd.	109⅞	111	111¼	107¼
U. S. Rubber Reclaiming	—	12	12	12
do pfd.	—	87	87	87

AJAX SHOWS NET LOSS OF $292,808 FOR 1926

Like many other rubber manufacturers, the Ajax Rubber Company, New York, suffered a loss in 1926 because of fluctuations in the price of crude rubber, despite larger sales. The annual report for 1926, just made public, shows a net loss of $292,807, after costs, interest and depreciation, Federal taxes and rebates to dealers owing to tire price reductions. In 1925 the company showed a net profit of $1,005,069.

Gross sales in 1926 totaled $22,036,198, against $18,868,865 in 1925. Other income aggregated $159,530, against $198,804 in the previous year. The rebates to dealers reached $805,439.

In his report to stockholders, J. C. Weston, president said: "Fluctuations in the price of crude rubber naturally affecing his situation, however, the showing made is creditable. The industry in the last few months has experienced a more stable market in rubber, and it is expected fluctuations in the rubber market may continue to be reasonably narrow during the present year."

MOHAWK REPORTS LOSS OF $223,000 FOR 1926

Although net sales totaled $6,500,000 in 1926, the Mohawk Rubber Company, reports a net loss of $223,000. Extreme fluctuations in crude rubber prices, tire price reductions and the conversion of the 9.5 per cent operating profit of $600,743 account for the net loss. The company has set aside, in addition, a reserve of $387,000 to cover all commitment losses on crude rubber in 1927.

Net sales during the year increased 24.1 per cent, according to S. S. Miller, president, who said, "Considerable progress has been made during the last year in the reduction of manufacturing costs and the more economical handling of business, and much greater strides along these lines will be made in 1927."

All officers were re-elected at the annual meeting held March 16. The following directors were elected: M. E. Mason, J. F. Jones, S. S. Miller, J. B. Huber, P. H. Schneider, E. J. Smail, Jr., Gilbert Marsh and R. M. Pillmore.

Smith Handling Own Sales

H. Monroe Smith, Passaic, N. J., recently announced that the Spadone Machine Co., N. Y. is no longer acting as selling agents for the Smith line of rubber machinery and that hereafter all equipment sales will be handled direct from Passaic. The Smith automatic machinery includes the travelling apron, cutting-off attachment, take-up reels, soapstoners, tube coilers and boxers, and buffing machines.

Fisk to Build Warehouse

A warehouse and distributing station to cost $100,000, and which will have an area of 25,000 square feet, will be erected at the northeast corner of 17th St. and Indiana Ave., Philadelphia, by the Fisk Rubber Company.

Trading Company, "Amsterdam"

(Handelsvereeniging "Amsterdam")

Dutch-American Rubber Plantation Company

Special circulars AR-14 on request

HARVEY FISK & SONS

Members New York Stock Exchange

NEW YORK
120 Broadway

LONDON
9-13 King William St. E C 4

Branch Office 257 West 57th Street

IN the first three months of 1927 —

compared with the corresponding period of a year ago —

the volume of advertising in THE RUBBER AGE showed an average increase of slightly over

74%

Every month additional new advertisers are using the pages of THE RUBBER AGE to reach rubber factory executives, purchasing agents, engineers and chemists.

There are a number of sound reasons for this which we will be glad to explain to any company selling to rubber manufacturers.

THE RUBBER AGE
250 West 57th St., N. Y.

JANUARY EXPORTS OF TIRES BREAK RECORD

Exports of Tires in January, Numbering 192,959, Set Record, but Represent Low Unit Value—More than 45 Per Cent of Total Exports were Casings.

The largest United States exports of tires for any month were reported in January when 192,959 casings were shipped abroad, but the lowest unit value in almost a year and a half was also set in that month. According to the Rubber Division, Department of Commerce, the value of January tire exports was more than 45 per cent of the total value of all rubber goods exports for the month which totaled $5,191,146, compared with shipments during December of $4,989,521.

Unit value of several other lines of rubber goods shipped during January also declined. Of the 22 unit values reported in both December and January, twelve decreased and one remained the same.

January exports of tires and accessories were valued at more than $3,000,000, the largest value since last May. Casings exports were valued at $2,436,998, at a unit value of $12.63 a casing. Exports of inner tubes were valued at $263,729, a value higher than for any month since October. January exports of other tire items declined.

About 50 per cent by volume and 46 per cent by value of American tire exports were brought by Argentina, Brazil, the United Kingdom, Germany and Cuba.

WISHNICK-TUMPEER NOW HAS OFFICE IN AKRON

Wishnick-Tumpeer, Inc., 251 Front St., New York, with branches at Cleveland and Chicago, has opened an office at 1101 Akron Savings & Loan Bldg., Akron, according to an announcement by V. G. Thomas, vice-president. G. G. Chase, formerly connected with the Seiberling Rubber Company, is manager of the new office.

EDWARD E. ALLEN & SON WIN CASE ON APPEAL

The United States Court of Appeals at Philadelphia has handed down a decision in the suit of John F. Allen, Allison Himrod, Edward E. Allen and the Continental Rubber Works, Erie, Pa., against the Vulcan Rubber Company, Erie, Pa. The case involved a press for making battery boxes, which is manufactured by Edward E. Allen & Son, Erie, Pa., and used by the Continental Rubber Works.

Judge Schoonmaker heard the case sometime ago at Erie and decided that the machine used by the Vulcan Rubber Company did not infringe the Allen patents. His decision has now been reversed.

The Court of Appeals in handing down the decision ruled that the presses used by the Vulcan Rubber Company in making battery boxes are an infringement on the Allen patent. The Court issued an injunction restraining the Vulcan company from further use of the presses and ordered an accounting.

CATALPO!

TITANIUM PIGMENT CO. MARKETS NEW PRODUCT

The Titanium Pigment Company, Inc., 94 Fulton St., New York, with plants at Niagara Falls and St. Louis, has placed on the market a new pigment called "Titanox," which is titanium oxide precipitated upon and coalesced with precipitated barium sulphate. It has been developed to fill the demand in the rubber industry for a bright white. It is extremely opaque and has great covering power, and the relatively low specific gravity of 4.3 gives a high bulking value. Its hiding power is from 50 to 100 per cent more than that of the usual opaque white pigments.

It is chemically stable and inert and does not react. It will withstand high temperatures without discoloration.

The Titanium Pigment Company also produces Calcium Base pigment, consisting of titanium oxide precipitated upon and coalesced with precipitated calcium sulphate. It has a specific gravity of 3.13 and a hiding power from 15 to 135 per cent greater than that of the usual opaque white pigments. This product is also chemically inert and when used as a tinting base produces bright, clear tints.

Tire Fabric Mill Opens

The Martha Mill, Tompkinson, Ga., recently was opened for the manufacture of tire fabrics. The factory is three stories in height, and is 460 by 160 feet. It is equipped with 30,000 spindles and auxiliary machines.

Consulting Rubber Technologist

PRACTICAL

Twenty years' experience with the largest and most successful companies in the country

Physical and Chemical Testing

Special facilities for abrasion and quick age tests

Expert Advice to Correct Factory Trouble

New Processes and Formulas Developed

R. R. OLIN LABORATORIES

852 Wall Street, Akron, Ohio.

BEGIN OPERATIONS AT OLD DOMINION PLANT

Operations have been begun at the factory of the Old Dominion Rubber Company, 506 First St., Norfolk, Va., but maximum production will not be reached for several weeks. The factory opened with an initial force of 25 employees, but, as it is stated that the entire output of the plant has been sold for at least a year ahead, additional employees will be hired when schedules have been systematized.

W. F. Boyd is president, R. J. Young, secretary-treasurer, and W. H. Boyd, factory superintendent.

Beaver Mill Raises Output

The Beaver Mills Corporation, Waterford, N. Y., manufacturer of tire fabrics, has increased production, and is rehiring employees who were laid off in a slack period. The company's mill at North Adams is now also running on increased schedules.

Demonstrates Tapping

W. Mark Hickey, president of the Auto Tire Company, Hartford, Conn., during automobile show week in Hartford arranged a demonstration of plantation rubber gathering methods at the State Armory. Abdul Bambula, a native of Stanleyville in the Belgian Congo and an experienced section foreman, showed how the trees are tapped, the latex gathered and coagulated and how it is packed for shipment. The native is an accomplished linquist, speaking eleven languages fluently.

A section of the floor was set aside to represent a rubber plantation. There Abdul Bambula explained the difference between various rubbers and answered questions. The miniature plantation was one of the most interesting exhibits at the Hartford auto show this year.

U. S. RUBBER ISSUES A MAGAZINE FOR DEALERS

The first issue of the *U. S. Tire Retailer*, a new house organ published by the United States Rubber Company to bridge the gap between the company and its dealers, made its appearance during the second week in March. According to an editorial on the first page, the magazine is dedicated solely to the service of the dealer, aiming to convey such information as will help him in his business.

The initial number contains 22 pages and cover, is printed on coated paper and is illustrated with photographs showing various activities of the company. One of the articles is concerned with the company's advertising program for 1927.

E. S. Underhill is editor and Donald Fairbairn, associate editor.

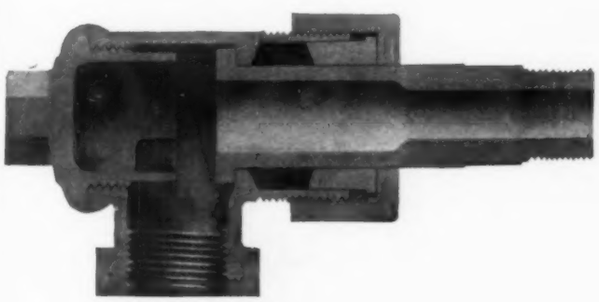
MASON TIRE & RUBBER HAS NEW POWER PLANT

The Mason Tire & Rubber Co., Kent, Ohio, has completed the installation of new equipment in its power plant and it is now in full operation. The building of the 150-foot brick stack, which carries the name, "Mason" in electric letters four feet high and marks the site of the factory for miles around, was a difficult engineering feat, due to the peculiar formation of the terrain and the problem of centralizing the location so as to eliminate the three steel stacks that were formerly in use.

The stack was erected by the Alphonse Custodis Company, New York and Chicago, and engineers specializing in power plant layouts worked in conjunction with J. B. Ricker, Mason plant engineer, in constructing and equipping the new building.

Navy to Order 800 Tires

The United States Navy will order approximately 800 automobile tires and 800 tubes for the cars in use at navy yards and stations for the period from April to June, it has just been announced by the Department of the Navy. The tires and tubes will be included in the General Supply Committee contracts covering the combined needs of the Government department at Washington.



SWING JOINT

"Bridgwater"
SWIVEL CONNECTIONS

EQUIP your presses with Bridgwater Swivel Connections and end your steam leaks and constant repacking costs.

A metallic packing is used in our joints and those packed over a year ago are still equipped with the original packing and will not need replacing for some time. *Bridgwater joints win by comparison.*

Try a set at our expense.

MOLDS **INDIA CORES** Special Machinery
(LICENSED BY INDIA MACHINE & RUBBER MOLD CO.)

Bridgwater Machine Company
AKRON OHIO

Personal Items

Lynn Harvey, manager of bus and truck tire sales for the India Tire & Rubber Co., Akron, left early in March for a trip through Ohio, Kentucky and Detroit in the interest of bus tire sales. C. T. Morledge, of the Akron sales department, left at the same time for a tour of the east, where he will visit branches and dealers in New York, Philadelphia and Boston.

* * *

Frederick A. Upperton, who has been associated with the London branch of the Firestone Tire & Rubber Co. for six years, first as a salesman and later as secretary of the London Firestone subsidiary, will soon leave for Singapore in the interests of the export department. He recently spent several weeks at the Akron factory. His duties in the East will take him to the Dutch East Indies, Straits Settlements and Siam.

* * *

W. H. Freeman, of the Dunlop Rubber Company, Ltd., Birmingham, Eng., accompanied Major H. O. D. Segrave to America. They came in on the *Berengaria* and have proceeded to Florida where the 1,000 H. P. Sunbeam racer, which is equipped with special Dunlop tires, will be tested at Daytona Beach.

* * *

Noah Van Cleef, of Van Cleef Brothers, Chicago, manufacturers of rubber cements, and a director of the Automotive Equipment Association, is traveling in Japan.

* * *

J. M. Parker and A. D. Bennett, of the sales staff of the United States Tire Company at Columbia, S. C., attended the six-day conference of the company at the Morgan & Wright factory in Detroit, at which salesmen from each of the U. S. branches were present.

* * *

H. C. Kirk, of Owensboro, Ky., formerly district representative for the Firestone Tire & Rubber Co., has gone to Louisville where he will represent the Seiberling Rubber Company. He is succeeded at Owensboro by E. B. Reed.

* * *

P. H. Goodall, assistant sales manager of the Mohawk Rubber Company, left Akron March 5 on an extended business trip throughout the west and middlewest.

* * *

E. J. Tesdell, manager of the accessories division of the Gates Rubber Company, Denver, Colo., is in the east calling on the export representatives and visiting the divisional warehouse at Jersey City, N. J.

* * *

H. L. Corbett, who has served the India Tire & Rubber Co. for several years in various capacities, has resigned and sailed from New York on March 12 for a two-months' trip to Europe.

* * *

H. E. Noonan has been made branch manager of the Firestone Tire & Rubber Co. at Salt Lake City, Utah.

* * *

E. G. Holt, chief of the Rubber Division, Department of Commerce, returned to the United States March 5 on the *President Roosevelt*.

* * *

H. J. Voss, G. D. Shats and C. V. Pringle of the Firestone Tire & Rubber Co. sailed March 5 for Liverpool on the *Carmania*.

* * *

Carl L. Beal, formerly associated with the research laboratory of the Eastman Kodak Company, Rochester, N. Y., has joined the B. F. Goodrich Company, Akron, where he is continuing his development work on the electrodeposition of rubber.

The Philadelphia Rubber Works Company

Manufacturer of

RECLAIMED RUBBER

of

STANDARDIZED QUALITY

NEW YORK
52 Vanderbilt Ave.

AKRON, OHIO PHILADELPHIA, PA.
Land Title Bldg.

CATALPO!

RECORD RUBBER STOCK AT END OF FEBRUARY

Stocks of Crude Rubber in the United States Have Climbed Steadily Since Last August —February Consumption Was 30,137 Tons On 100% Basis.

Statistics issued by the Rubber Association of America on March 15 revealed that stocks of crude rubber in the United States at the end of February reached the highest figure in many years—91,186 tons, an increase of 15,014 tons over January. This is known to be the largest increase in rubber stocks during one month ever recorded in this country. As a result, it was not surprising that the report had a depressing effect on the crude rubber market March 14.

Stocks of crude rubber have been increasing steadily since last August, when they reached a total of 60,870 tons. They climbed to 62,078 tons at the end of September, in October they had reached 64,989, in November 69,385, and at the end of the year stood at 72,510. Stocks on hand Jan. 31 totaled 76,172 tons. In other words, stocks of crude rubber in the United States, according to the Rubber Association have increased 30,316 tons since August, 1926. But the heavy increase of 15,014 tons in February was attributed to large January imports, which reached the record total of 45,736 tons, while January and February consumption fell below the figures for these two months last year.

Less Rubber Now Afloat

The slow but gradual effect of the Stevenson Act was shown in a further reduction of the quantity of rubber afloat to United States ports at the end of February. Stocks afloat on Feb. 28 totaled 42,166 tons, compared to 45,200 tons at the end of January and 52,019 tons afloat at the end of December.

Crude rubber consumption in February was 30,137 tons, according to the Rubber Association report raised to 100%; as issued the report is estimated at 90 per cent complete. This figure compares favorably with consumption during the busy months of October, when it was 29,836, and November, 28,080, but was 1,381 tons below the January consumption figure of 31,518 tons, and 1,099 tons below the figure of 31,136 tons for January, 1925.

Imports of crude rubber into the United States during February totaled 27,410 tons, a small arrival figure for even that short month, but which failed, nevertheless, to offset the heavy increase in stocks. Imports in February, 1925, were 34,067 tons, but compared favorably with consumption of 31,136. In February, 1926, consumption exceeded imports by 7,273 tons.

In February, 25,326 tons of plantations were imported, compared to 31,832 tons in February, 1926, but imports of Paras increased, being 1,668 tons last February, against 1,548 in the same month in 1926. Paras were the only grades which showed an increase for the month when compared with the same month last year.

SUGGEST PURCHASE OF RUBBER SHARES IN N. Y.

Harvey Fisk & Sons, New York brokers having offices at 120 Broadway, have issued a circular in which they review the current crude rubber situation and invite attention to the present attractive price of the stock of the Dutch-American Rubber Plantation Company. This company was organized in December, 1925, under the laws of the Kingdom of Netherlands. It has an authorized capital stock of 6,000,000 guilders, equivalent to 60,000 shares of $40 each. The amount outstanding, however, is only 13,500 shares. Of this 5,000 shares were offered in the New York market at the time the company was launched.

The shares of the Dutch-American Rubber Plantation Company are listed on the Amsterdam Bourse. Trading in New York is in Guaranty Trust Company of New York, depository receipts in denominations for 10 shares of $40 par value, i.e., $400 and multiples thereof. These receipts are interchangeable for 1,000 guilder shares traded in on the Amsterdam Bourse, and vice versa. Shortly after their introduction in the American market at the end of 1925, the shares of this company sold above $40. In sympathy with the general tendency of the rubber market, they have subsequently declined to about $35. In view of that price level and the crude rubber situation as they see it, Harvey Fisk & Sons suggest the present purchase of the shares.

Dry Foot Rubber Formed

The Dry Foot Rubber Company, with offices in the Charles Bldg. and factory at 3563 Wazee St., Denver, Colo., has been organized to manufacture mechanical rubber goods.

In All the World

we are the largest producers of carbon black selling their own product. We control in excess of 20,000,000 lbs. annually to insure fulfillment of customers' requirements.

CARBON BLACK
GODFREY L. CABOT, INC.
940 Old South Building, Boston.

SEIBERLING TO OPEN A CANADIAN FACTORY

Announced at Annual Meeting that First Foreign Plant of the Company will be Opened in Toronto by April 1—May Start Payment of Common Dividends.

It was announced at the annual meeting of common stockholders held March 14 that the Seiberling Rubber Company, Akron, will establish its first foreign plant in Toronto, Canada, by April 1.

The company leased the plant of the K. & S. Tire Company in Toronto and will take over its complete production. Capacity at present of 1,000 tires a day will be doubled immediately. Arrangements between the parent company and the Canadian branch factory will permit Seiberling tires to be manufactured in Toronto for sale in Canada and other British colonies.

The new addition to the factory of the Seiberling Rubber Company, Barberton, Ohio, will be ready for operation early in April, according to F. A. Seiberling, president. When completed, the new unit will have cost approximately $700,000. It will house much equipment especially designed and perfected by Seiberling engineers. In operation, it will increase the capacity of the factory to over 6,000 tires a day.

The addition was made necessary, it is stated, by the rapid increase in the use of the company's products. Last year the Seiberling Rubber Company increased its sales of tires and tubes over 41 per cent—the largest increase in sales reported by any rubber company.

NEW GROUP TO ACQUIRE OAK TIRE & RUBBER CO.

It is rumored that a new group, headed by Frank Law, former general manager, will take over the factory of the Oak Tire & Rubber Co., Oakville, Ont. The factory has not been operated for some time. It is understood that under the reorganization, preferred and common stockholders will receive nothing for their equity, although there will be a balance left for bondholders after prior obligations are met. It is said that plans provide for obtaining United States capital.

The latest balance sheet available showed preferred stock outstanding totaling $582,200 and common stock of $1,261,545. A $100,000 bond issue was offered early in 1924 to shareholders "to protect their equity." Prior to this issue there were bonded and mortgage obligations of $27,000. At the end of 1924 the company showed a deficit of $122,780.

CATALPO!

CATALPO!

17,504 TIRES WERE IMPORTED LAST YEAR

Tire imports into the United States in 1926 numbered 17,504 units, valued at $161,303, compared with 21,139, valued at $263,185 in 1925 and 183,586, valued at $1,098,715 in 1924. According to the Rubber Division, Department of Commerce, France shipped 4,784 tires to this country in 1926, valued at $60,848; Great Britain, 360, valued at $3,407; Canada, 12,110, valued at $95,140; and all other countries, 250, valued at $1,905. In 1924, France shipped 181,710 tires, valued at $1,072,643, explained by the fact that the Michelin company engaged in an extensive advertising campaign to acquaint American motorists with the advantages of balloon tires, with such remarkable results that the tires had to be imported from the French factory in large quantities.

Receiver Asked for Schultz

The F. A. Schultz Rubber Mfg. Company, 21 Jefferson Ave., Hasbrouck Heights, N. J., with a plant at Lodi, is called upon to show cause March 28 why a receiver should not be appointed. Vice-Chancellor Lewis issued the order on the petition of Frederick A. Schultz, a stockholder and creditor, who says that the assets of the company, amounting to $4,000, are more than equalled by its liabilities.

The factory at Lodi is worth $19,000, but is encumbered by mortgages of $16,000 and interest accrued. The F. A. Schultz company manufactures molded goods, and does crude rubber washing, milling and grinding for the trade.

DE MATTIA EQUIPMENT TO BE INTRODUCED ABROAD

Two well known engineers, Dr. Erwin Meyer and A. Schoen, M. E., of the Meyer-Schoen Engineering Co., Detroit, Mich., sailed on Saturday, March 19, to visit European rubber factories in the interests of a number of American producers of machinery, chemicals and compounding materials.

Dr. Meyer was formerly chief consulting chemist of the tire plants of the U. S. Rubber Co., and previously he had been connected with several rubber manufacturers in Germany and England in similar capacities. Mr. Schoen is a mechanical engineer of broad experience well known throughout the middle West.

Before departing, the two engineers made exhaustive tests of the De Mattia Book Type Individual Tire Molds manufactured by De Mattia Brothers, Inc., Clifton, N. J. Both Dr. Meyer and Mr. Schoen spent some time at the De Mattia plant studying the tire equipment in order to become thoroughly familiar with the manufacture and uses of the book-type mold and other vulcanizing equipment which they will introduce on the continent.

SAMSON TIRE HOLDS ANNUAL CONVENTION

The Samson Tire & Rubber Corp., Los Angeles, with factory at Compton, Cal., held its eighth annual sales convention during the second week in March, with representatives from all over the country in attendance.

It was pointed out that 1926 production was as great as the combined production for the two preceding years. The company intends to open up new sales territory in Texas and Oklahoma, and begin an intensive sales campaign in the eastern States.

The company announced a new line of balloon tires, which had been tested for the past year without being offered to the public.

U. S. Holds Convention

About five hundred representatives of the United States Rubber Company attended the annual convention of the company in Detroit during the second week in March. The address of Charles B. Seger, president, caused considerable favorable comment. Other addresses were made by George R. Shugart, Ernest Hopkinson and John W. Bicknell, all vice-presidents. Mr. Bicknell, who has charge of the company's plantations, spoke of its foreign activities and illustrated his talk with motion pictures.

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HORIZONTAL TYPE MOLD

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For Tires, Tubes and Air Bags

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Top half operated by air or Spring Balance Control with additional Center Lock for larger sizes. - - Reducing the fin to minimum.

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Tire Building Equipment Since 1909

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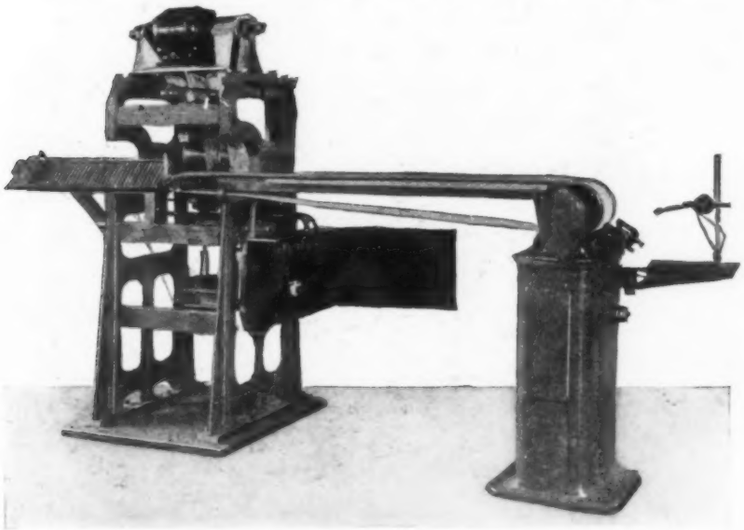
IMPROVED AUTOMATIC CUTTING OFF MACHINE



Automatic Traveling Apron with Circular Knife Cutting-off and Deflector Attachments.

The machine illustrated on this page is the latest model of the Smith automatic travelling apron which now includes a circular knife attachment in addition to the automatic stop and stock deflector.

In operation, the machine is placed in front of the tuber and its speed is automatically governed by the speed at which the stock comes from the tuber. The stock runs under the automatic control (shown at the extreme right) on to the belt and along the belt across the rollers until it hits the automatic stop. This releases the circular knife which swings forward, cutting off the stock and at the some time stopping travel of the apron.

As soon as the knife has cut through the stock, it returns to its original position and sets in motion the deflector which dumps the cut-off piece into a suitable receptacle. The deflector then returns to a flat position which releases the travelling apron, allowing it to run again, and the operation is then repeated.

According to the manufacturer, any kind of tubing, air brake tubes, jar ring tubes, irregular shapes, tire tubes, tire treads, and similar tubed stocks can be easily handled with this equipment. The only operator required is one to feed the tuber as the cutter is entirely automatic. (H. Monroe Smith, Passaic, N. J.)

Pioneer Making Gloves

The Attica, Ohio, factory of the Pioneer Rubber Company is now manufacturing rubber gloves. R. H. Coovert is superintendent of both the Attica and Willard factories.

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WANTED by well known chemical manufacturer —Graduate Chemist with several years experience in rubber laboratory and factory problems, for sales work. Account of travelling most of time single man preferred. Attractive renumeration—salary or commission. Address Box 453, THE RUBBER AGE.

WANTED SALESMAN to sell Rubber Coated Calender and Spreader Fabrics either Single or Double Texture. Must be experienced. Address Box 454, THE RUBBER AGE.

EQUIPMENT WANTED

We are in the market for six 24 inch PRESSES also one CALENDER from 40 to 60 inch. Dry Foot Rubber Co., 3563 Wazee St., Denver, Colo.

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Put value in.

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Everything accessible.
Enormous output.

Extensively used both for reclaimed rubber and compounded stock.

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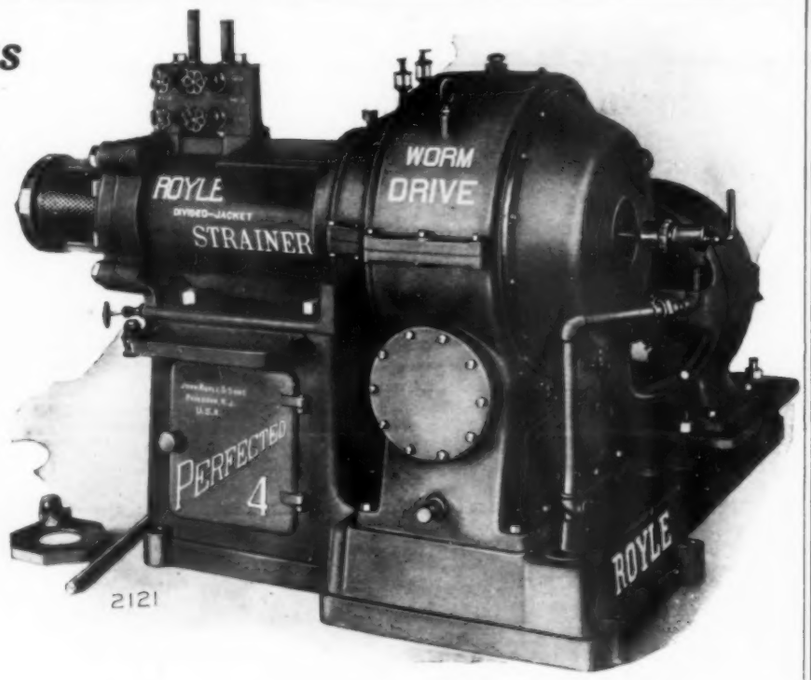

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Palm Oil
Pine Tar
Pine Pitch
Pitch—Burgundy
REDS (Misc.)
Red Oxide
Rosin Oil
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The RUBBER AGE

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Obligations Made to Order

DISCUSSION in this country of the merits or faults of British rubber restriction has largely ceased, as well it might since the legislation is now in its fifth year and a clearly defined policy for its continuance has been enunciated. In the current issue of *The North American Review*, however, the subject is reopened by H. Eric Miller under the title "A Britisher Looks at Rubber." If Mr. Miller had chosen a title a little more revealing as to how great was the direct interest of this particular Britisher in the subject of rubber, the readers of the article might have examined his arguments with the closer scrutiny they have always deserved.

With one exception it would be unfair to accuse Mr. Miller of having made any change in the stock arguments which are well-known and need no repeating to the rubber industry. The usual case for the need of some remedial legislation is made out, after which he swings into his defence of the way in which restriction has operated. As might have been expected, no blame is attached to the provisions of the restriction scheme itself in spite of the fact that it has been altered considerably from time to time, all of which alterations have been proclaimed as improvements. Instead, Mr. Miller passes over such matters as the relationship of world supply to the demanded price and the inflexibility of the scheme itself and puts the entire blame for any distress that it occasioned onto the manufacturers who "virtually forgot all about the Stevenson scheme and their obligations under it."

Like the other arguments, this failure of the Americans to live up to their "obligations" is not exactly new, but it is an argument that will bear American comment as often as it is mentioned. The facts are that the rubber consumers had no part in drafting the restriction scheme and were not consulted before its provisions were formally put into effect. It does not appear that the manufacturers have ever complained that such was the case and they would have no legitimate grounds for doing so. They do, however, have reason for a righteous protest when blamed for having failed to meet "obligations" in a scheme in which they had no part and against which they protested at the first opportunity.

In following this line of reasoning, Mr. Miller touches on a point which he and his associates have persistently overlooked in the past, at least in their public statements. That is the financial inability of the American consumers completely to undertake the "obligations" which Great Britain laid on their unwilling shoulders. In buying as they did, instead of as the scheme meant for them to do, Mr. Miller admits that they were "strongly encouraged by American bankers." In many cases it could be developed that the "encouragement" by the bankers and by the company treasurers as well, was more nearly dictation.

Mr. Miller attributes a large part of the soaring prices of 1925 to the agitation made in the United States when the stringency appeared. This outcry, in his opinion, encouraged unwise buying of tires by motorists as well as widespread speculation. The moral apparently is that the penalty for having failed to meet its unassumed obligations should be received by the industry meekly and silently, which is perhaps even too much for Mr. Miller and his associates to expect.

Oranges in Maine

A CAUSTIC writer in a New York financial journal devotes half a column to a diatribe on what he terms "Deadhead Rubber Advertising." One finds, in his second paragraph, that he is talking about rubber growing in Liberia, and the advertising which he condemns is the publicity which has, in rather copious quantities, attended the attempt, or intention, to establish vast rubber plantations in that country. Such publicity he puts in the class of the "tin lizzie" jokes which Henry Ford is said to have welcomed rather than discouraged.

The vicious thing about such propaganda, the financial writer develops, is its absolute untruth for, he states, Liberia is not a rubber growing country. "People who talk of growing rubber in Liberia, or in the Philippines in the face of the government report," he writes, "are talking nonsense and know nothing about the growing of rubber.....It is possible to grow oranges in the state of Maine, but they would not be very good oranges and they would be expensive....". He finally ends with the statement that "the only conclusion for a reasonable mind to draw is that all this rubber growing talk is a form of deadhead advertising."

Here is something to chuckle at for a moment, but in the end it may well be regarded seriously. The justice or injustice of his claims about free advertising may be passed by, but one can regret that he has chosen to add to the confusion which most financial interests must feel about the whole subject of rubber growing. It is obvious that the complainant knows but little of rubber growing himself, either inside or outside the government report, for small rubber plantations have already been successfully launched in both Liberia and the Philippines. In venting his feeling against particular practices or interests, he has sweepingly condemned the legitimate claims which both Liberia and the Philippines have to consideration from a rubber growing standpoint. In trying to right what he considers a wrong he has by mis-statement weakened his own case and perhaps added further to the confusion of a group who should be correctly informed and interested if America's stake in rubber growing is ever to amount to anything.

Manhattan Opens New Testing Laboratory at Passaic

Company's Staff of Thirty-Seven Laboratory Workers Now Occupies Separate Building Fully Equipped with the Most Modern Devices

IN KEEPING with the improvement in modern production methods, rubber manufacturers have in recent years given more and more attention to the chemical and physical testing of manufactured products as well as to research. The chemist of twenty years ago was begrudged a small corner for his test tubes in an out-of-the-way part of the factory. As the importance of the chemist, physicist and research engineer has been realized, more and more space has been given to this branch of rubber manufacturing, until today there is hardly a plant of any size in the rubber industry that does not have a staff of technical men working on testing and research problems.

The latest rubber laboratory, and undoubtedly one of the most complete in the rubber industry, is that just opened by the Manhattan Rubber Mfg. Co., in Passaic, N. J. Originally the laboratory of this company was located in the factory proper but as the staff grew in numbers, it was decided to erect a separate building for the physical, chemical and research laboratories. The present two-story fireproof building is the result.

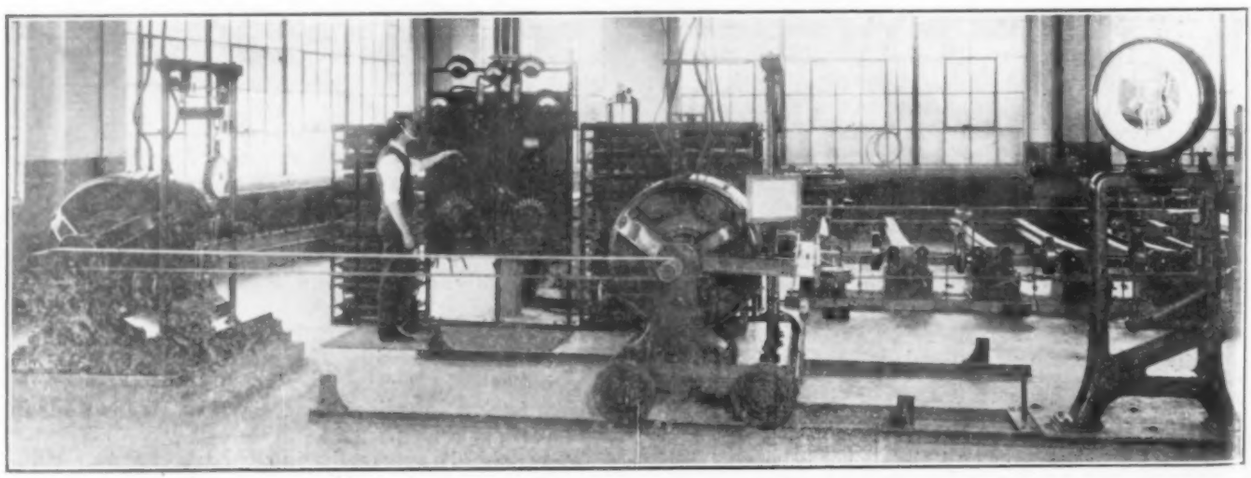
The Manhattan Rubber Mfg. Company manufactures an extensive line of transmission and conveyor belting; Hycoe automotive brake lining, which is original equipment on many high grade cars; fire, water, air and steam hose; rubber covered rolls; soles; heels; clutch disks; mats, and various other mechanical products. In addition, it also maintains its own rubber reclaiming plant. The manufacture of such a diversified line of rubber products requires much technical control and research under the guidance of technicians skilled in all branches of rubber manufacture and testing, and naturally it is a good investment to give these skilled workers the proper facilities.

On the first floor of Manhattan's new laboratory building are the physical testing and factory control departments and a laboratory equipped for chemical and physical research. On the second floor is the laboratory office, conference room, technical library, fabric testing laboratory and the chemical and analytical laboratory. On the roof are the steam racks for testing hose and facilities for making weathering tests of rubber stocks.

View Showing (left to right) Compression Tester, Riehle Belt Tester and N. J. Zinc Abrasion Machine

The physical testing laboratory on the ground floor contains the usual standard equipment for testing mechanical rubber goods as well as a number of special appliances developed by members of the laboratory staff. A die-ing out press is used for cutting samples of sheet stock and a lathe cuts test sections of hose. An Olsen tensile tester is available for general test purposes but the latest model Scott quick return autographic tensile testers are used to obtain results more in keeping with modern demands. This tester, (a full description of which appeared in the Dec. 10 issue of THE RUBBER AGE) provides by means of a new arrangement of gears, for the instantaneous return of the lower clamp after the test sample has been broken. The machine is equipped with the flat plate type of recorder and utilizes the new method of obtaining data points by means of holes burnt through the recording sheet by electric sparks, through which points the stress strain diagram curves are then drawn. These improvements are said to more than double the efficiency of the apparatus.

An especially designed autographic device for testing the strength of the friction between plies stands close by. This

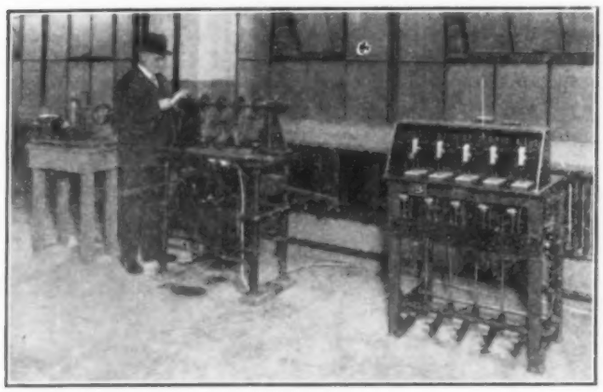


This Illustration Shows Clearly the Sprague Electric Belt Dynamometer Used for Determining Wear, Life, Power Transmitted, Stretch and Coefficient of Friction of Belts—In the Background, at the right, is Seen the Multiple Belt Dynamometer Used for Testing the Life of Six Belts at One Time.

machine was designed by Manhattan Rubber Company engineers who used as a guide a similar appliance in the Boston Woven Hose & Rubber Company's laboratory. It uses a Scott Gear Box and Crosby steam gauges. The point of ply separation is clearly and automatically recorded.

The Hydraulic Test Tank is an ingenious unit consisting of a shallow covered steel tank in which provision is made for attaching sections of air brake, steam and water hose to high or low pressure water and air lines. Tests are conducted for expansion, porosity and bursting pressure. Air leakage can also be determined in this tank by submerging in water a section of hose filled with air.

Another hose testing device is the Flexing Machine in which



Left to Right — Testing Rubber Gaskets Used in Oil Purifiers, Manhattan Belt Flexing Machine and a Scott Flexing Machine Made to A.S.T.M. Specifications.

one end of an 18" section of hose is held rigid and the other end rotated. A simple counting device keeps a record of the number of revolutions until the section fails from flexing. The hose is kept under 100 lbs. air pressure during the test.

A further test is given in the Digester. In this machine a section of hose is held in a vertical position in an atmosphere of steam for 48 hours after which it is examined and given simple tests to determine how it has withstood the steam.

For testing rubber belting a number of appliances are used. A Sprague Electric Belt Dynamometer, consisting of a motor, generator and suitable apparatus for recording the results, is used to determine wear, life, power transmitted, stretch and coefficient of friction of different belt constructions. The belt is run under severe conditions at various speeds until failure occurs. Another Multiple Belt Dynamometer is used for determining the life of 6 belts at the same time. On these machines the conditions of actual rubber belt service are closely simulated.

Other tests on belts cover their tensile strength and their ability to withstand flexing. The flexing test is made on the Scott Flexing Machine which bends 8-inch strips back and forth until ply separation takes place. The number of revolutions before failure is then recorded. This machine was originally designed by United States Rubber Company engineers but is now manufactured by the H. L. Scott Co., Providence, R. I. It was perfected for belt testing by W. L. Sturtevant, Director of the Manhattan laboratories, in conjunction with the American Society of Testing Materials. Mr. Sturtevant is chairman of the Society's Committee to develop a service test for rubber belting.

The tensile test for belting is made on an Olsen tester of 20,000 lb. capacity and consists of a straight break test to determine tensile strength and stretch. Rubber belts for vacuum cleaner brush drives are tested by connecting a number of these belts to brushes which revolve against a piece of fabric used to replace carpet. The results sought in this test are the number of hours of use before failure.

Rubber gaskets, such as those used in oil purifiers on automobiles, are tested in Manhattan's laboratory by pumping heated oil through several models of purifiers for a number of days, after which the gaskets are tested for condition.

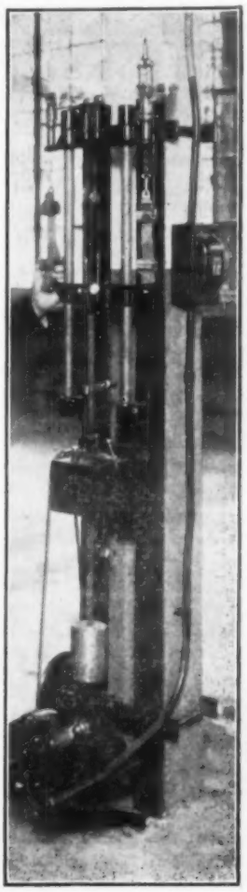
An interesting piece of apparatus is used for testing rubber under a kneading action. A section of cured stock is mounted to fit around a square shaft. To keep the rubber rigid a square form is clamped firmly around it. The shaft is then rocked back and forth by means of pivoted arms until the rubber breaks down. A record is kept of the number of back-and-forth movements before failure.

Brake lining is tested on a special electric dynamometer. The sample is fastened to an arm which is pressed against an automobile brake drum which is revolved at a speed equal to 60 miles an hour. This test determines the resistance to wear, coefficient of friction and braking power of the lining.

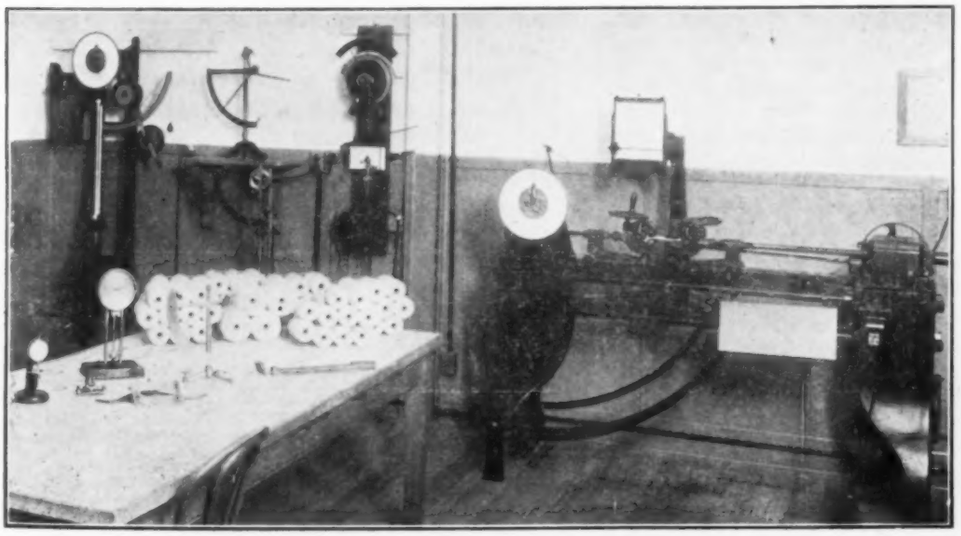
Included among the equipment in the physical laboratory are two devices of the New Jersey Zinc Co., one an abrasion machine and the other an electrically heated ageing oven.

[Concluded on next page.]

RIGHT—Special Autographic Testing Machine Designed by Manhattan Rubber Company Engineers for Determining the Strength of Friction Between Belt Plies.



BELOW—A corner of the Duck and Yarn Testing Laboratory; in the Foreground a Scott Horizontal Duck Tester and at the Left a Scott Skein Tester, Scott Single Strand Tester and between these an Alfred Suter Quadrant for Determining Yarn Weight.



Other equipment includes an autoclave, a printing machine for testing rubber stock used in printing on burlap bags, friction testing apparatus, a small mill for mixing test batches, a horizontal vulcanizer, platen presses, scales, gauges, balances and storage bins. In a separate small building just outside the laboratory proper is kept a Bierer-Davis oxygen bomb ageing test apparatus.

Special research work is conducted in a separate laboratory on the main floor. This laboratory is equipped with a platen press, mixing mill, and other equipment for making chemical, physical and analytical tests.

On the second floor of the laboratory building there are located the library, the laboratory office, conference room, the chemical laboratory and the fabric testing room. The chemical laboratory, used for development and test purposes, is equipped with modern appliances such as Alberene stone hoods, tables, shelves and sinks. The hoods are arranged so that gases may be drawn off at both top and bottom, thus taking care of the disposal of heavy and light gases. The usual provisions for air, gas, water and electricity are made in this laboratory. Among the equipment are the following: analytical balances; extraction apparatus for determining acetone extractable materials; muffle furnace for determining ash in rubber by burning off the volatile and combustible materials; constant temperature ovens, Jolly balance for determining the specific gravity of solids, and a combustion furnace for determining carbon in rubber, cotton in asbestos fabric, etc.

The Fabric Testing Laboratory

The fabric testing laboratory was designed to incorporate all the latest known conveniences. Not only was a Celotex insulated wall used around the room to insure easy control of humidity and temperature, but inside an American Air Humidifier is used to control the humidity. In this laboratory are tested all fabrics and yarns used in making hose, belting and other Manhattan products. Tensile tests, the amount of twist in yarns, per cent of crimp in fabrics, size of hanks and skeins of yarn and weight and weave determinations are some of the tests made on fabrics.

Among the equipment in this laboratory are the following machines: Scott Horizontal Duck Tester (800 lb. Model); Scott Power Single Strand Tester (50 lbs.); Scott 300 lb. Tester for testing skein of yarn; a skeining reel; Freas Electric oven for determining the actual percentage of moisture regain on fabric; Alfred Suter Quadrant for determining yarn weight; Alfred Suter Single Strand Yarn Tester (hand model); Taylor Instrument Co. Automatic Humidity Recorder; and several balances.

A feature of interest on the second floor is a group of individual storage lockers in which each laboratory worker may keep samples, stocks or other materials on which he may be working without fear of their being lost, misplaced or destroyed by error.

The laboratory director is W. L. Sturtevant, chemical engineer who was graduated from the University of Maine in 1908. He is well known in the rubber industry for his valuable contributions on specifications and test methods on hose and belting. His service with Manhattan dates from 1912.

The assistant director is K. J. Soule, chemical engineer, who was graduated from the University of Washington in 1916. He is a member of several technical and scholastic societies and is well known in the rubber industry for his work in conjunction with the Rubber Association and the A. S. T. M., as well as for articles on rubber technology.

Among the other chemists, mechanical engineers and research men is D. Repony, a research engineer who contributed a number of technical articles to THE RUBBER AGE a few years ago. Others are J. E. Skane, fabrics and belting development; J. V. Bassett, field development; J. T. Brand, specification compounding; J. L. Clark, crude rubber and compounding research; P. A. Cady, factory research and process control; T. L. Belcher, experimental compounding; W. E. Perking, experimental machine design; A. F. Schildhauer, factory control work; H. R. Ferguson, compounding development and production control; and G. L. Hassert, analytical chemist. The staff, including laboratory workers, numbers thirty-seven.

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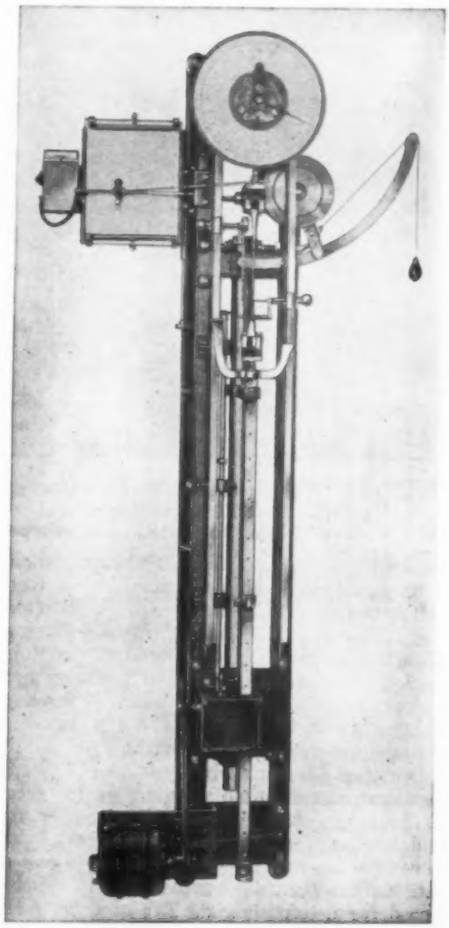

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[***NOTE article in this issue on Manhattan Rubber Co. Laboratory***]

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Rubber Company Profits Decline

Five Largest Rubber Manufacturers Have Averaged Only Seven Per Cent Profit on Sales in Last Three Years

IN PRESENTING the 1926 financial statement of his company to the stockholders, the president of one of the big rubber companies invited attention to the fact that on account of the characteristic instability of crude rubber prices, it was not reasonable to take the profits of one year as fully representative of the earning power of the company. Probably other executives expressed the same observation which is, or should be, practically a truism throughout the rubber industry. However, the need for averaging the years rather than considering each one separately was never better illustrated than in 1925 and 1926.

In 1925 the rubber industry was suspected in some quarters of advancing its prices unduly as the spot price of rubber raced upward. The opinion, plentifully colored with political ardor, was expressed in Congress that the country's rubber manufacturers were taking advantage of the American public by charging higher prices for rubber goods before they had exhausted the stock of cheaper rubber which they had bought on forward contracts some months previously. The reply of the manufacturers, had they made one, would have been that what appeared to be avarice was merely fortification against a day when spot prices of rubber would tumble and leave them with high priced inventories. The soundness of such a reply is at once apparent to anyone examining the financial statements for 1926 that have now been published.

Profits and Sales of Five Biggest Companies

In the table on this page is shown the gross sales of the five largest rubber manufacturers of the country, commonly referred to as the "Big Five". Their profits after interest and other charges but before preferred dividends are also shown and a percentage relationship between the profits and the gross sales is established. Such figures are given for the last three years for easy comparison, and finally the sum of the sales and profits for the three years is given. It will be developed later that these five companies do more than half of the country's rubber business and a picture of their financial progress is typical and easily grasped.

It will be seen for instance, that the average profits of the group in 1925 were not as high as many people may have believed. The average profit on sales for the "Big Five" is a trifle below 10%, or 9.9% to be exact. These profits, however, were not entirely for distribution to holders of the preferred and common stock, or for addition to surplus, since many of the companies set aside many millions of dollars as reserves to protect themselves when the price of crude rubber fell. Goodrich, as an example, set aside $4,000,000 in that way in 1925, Goodyear earmarked $7,500,000 for the same purpose, and the other companies set aside various amounts.

The succeeding year, 1926, showed the other side of the shield. Average profits fell to 4.2%. It is most important to note, however, that the companies achieved even this poor showing only by taking into their income accounts all or part of the crude rubber reserves which had been set up in previous years. The United States Rubber Company used up $3,000,000 of its reserves, Goodrich used up $5,000,000, Goodyear took into account no less than $5,250,000 and the other companies also expended large sums that had been saved from 1925 to mitigate the declining crude rubber prices that they knew must come. Had such sums not been used to bolster the annual statements for 1926, the average profit of the "Big Five" for the year would have been well under 3%! Just how difficult a year 1926 really was is best realized by contemplating the fact that less than 3% was actually earned on sales of more than $800,000,000. Incidentally, the profits of the United States Rubber Company shown in the table do not contain a $6,000,000 dividend received from its plantations but which does not affect the profits on sales of manufactured goods.

The average profits for 1925 and 1926 taken together approximate 7% per year. Seven per cent happens to be the rate that was earned in 1924 which was a more normal year than either 1925 or 1926. Judging from these three years the normal profit on sales in the rubber industry might be said to be around 7%, which is certainly not high enough to put rubber manufacturing in the class of the really prosperous manufacturing industries of the country. Higher profits have been earned in some years, as for instance immediately after the end of the World War, but they were rapidly scaled down by the lean, deflation years which followed.

In connection with the gross sales of the five biggest companies, it is interesting to note that the Goodyear organization, which practically equalled the United States Rubber Company sales in 1925, surpassed that competitor in 1926. Goodyear gross sales in 1926 were $230,161,536 as compared to $215,528,309 for the U. S. Rubber Company. Goodyear increased its sales by 11½% over 1925 while the increase of the U. S. Rubber Company was only 4.3%.

Firestone Increases Sales Substantially

The Firestone company increased its sales about 15% and showed a gross for the year that almost equalled the Goodrich who also forged ahead, although less rapidly. Fisk sales showed the only decline in the group of larger companies, grossing about 9% less in 1926 than in 1925.

Firestone's consistent earning power is probably due in large part to the fact that working capital is turned rapidly. The company has no funded debt, the entire capital being in preferred and common stock to the amount of $29,239,140. Since the company did a business of $144,397,000 in 1926, it is seen that the capital was turned almost five times. None of the other companies approached this record although all of them, with the exception of the U. S. Rubber Company turned their capital more than once.

The same impression of 1926 being a year of increasing sales but declining profits is borne out by the financial statements of the smaller companies also, such as General, Ajax, Miller, Kelly-Springfield and Seiberling. Hood's fiscal year does not end until March 31 and cannot be compared along with these other companies which constitute a group following the "Big Five" in size and prominence.

General's gross sales increased about $2,000,000 during 1926

GROSS SALES AND PROFITS OF RUBBER MANUFACTURING COMPANIES

(Profits shown are after interest and other charges but before preferred dividends or appropriations for reserves)

	1924			1925			1926			Three-Year Total		
Company	Gross Sales	Profits	Per Cent	Gross Sales	Profits	Per Cent	Gross Sales	Profits**	Per Cent	Gross Sales	Profits	Per Cent
U. S Rubber	$172,219,353	$8,368,035	4 8	$206,473,737	$17,309,870	8.4	$215,528,309	$8,761,869¶	4.1	$594,221,399	$34,439.774	5.8
Goodyear	138,777,718	12,161,540	8.7	205,999,820	21,005,898	10.2	230,161,536	8,799,138	3.8	574,939,074	41,966,576	7.3
Goodrich	109,817,685	8,822,504	8.0	136,239,526	16,744,447	12.3	148,391,478	5,065,110	3.5	394,448,689	30,632,061	7.8
Firestone*	85,610,004	7,116,689	8.3	125,597,998	12,800,412	10.1	144,397,000	7,622,339	5.3	355,605,002	27,539,440	7.8
Fisk*	52,956,532	2,736,664	5.2	74,900,373	6,108,906	8.1	68,051,739	3,354,431	4.8	195,908,644	12,200,001	6.2
Total	559,381,292	39,205,432	7.0	749,211,454	73,969,533	9.9	806,530,062	33,602,887	4.2	2,115,122,808	146,777,952	6.9

*Fiscal year ends October 31. **Without deduction of reserves taken into income account. ¶Does not include $6,000,000 profit from plantations.

to a total of $20,100,000, but net profits in 1926 were $709,831 as compared with $1,843,299 in 1925. Seiberling's 1926 sales gained 41% over 1925, the total being $14,920,294 with less satisfactory earnings. Miller does not publish its sales figures but did announce that on increased sales the profit fell in 1926 to $1,025,454; in 1925 it was $3,533,201. Kelly-Springfield showed a loss of about $3,500,000 in 1926 which compares with a net income of $1,452,577 in 1925. These figures will show that the group of smaller but important companies that follow the "Big Five" in size did not escape the devastating effects of the fluctuations in the prices of their raw materials.

The "compactness" of the rubber industry is quickly realized when one scans the total of the sales that have been made by the five largest companies and compares it to the total rubber goods sales in the United States in a given year. In spite of fluctuating profits, the "Big Five," as seen from the table, do more business every year, even when the prices of finished goods are cut as in 1926. In 1924 the five companies did only a little better than a half-billion in sales; in 1926 they did over eight hundred million. This is due both to an increase in the amount of rubber goods absorbed by the market and the tendency of the five biggest companies to become still more predominant in the field.

How the Total Business is Divided

According to the Census Bureau, the wholesale value of all the rubber goods produced in the United States in 1925 was approximately $1,375,000,000. In 1924 and 1926 no official census was taken and we are forced to rely on the figures of the Rubber Association of America which are estimated to be about only 90% complete. When they are raised to 100%, the sales total for all companies in 1924 appears to have been approximately $1,000,000,000 while in 1926 it was around $1,340,000,000. If we compare the aggregate business of the "Big Five" with these totals for the entire industry we see that their percentage of the business has been about as follows: 1924, 55.9%; 1925, 55.3%; and 1926, 60.2%. For the three years the percentage of the total business that was secured by the five companies would average around 57%. The accuracy of these figures for 1924 and 1926, and accordingly for the three-year average, depends on the reliability of the Rubber Association figures of total business done by all rubber manufacturers, but it is evident that the percentages are not far wrong and that the "Big Five" fully earn their nickname.

The present year promises to be a more normal one for the rubber industry than either 1925 or 1926, and the profits on sales may logically be expected at least to equal those of 1924 when 7% was earned. Stocks of high priced crude rubber have been used up for the most part, and raw materials included in the inventories at the beginning of 1925 were taken in at prices not far from current quotations. Prices of finished goods appear to be at the bottom and both crude rubber and cotton prices are gradually developing a little greater strength. A more stable year with satisfactory sales appears in prospect and both large and small rubber companies should benefit.

Should there be need for additional adjustment of raw material inventories, most of the large companies still have some reserves for that purpose. The U. S. Rubber Company, for example, at the end of 1926 set aside over $8,000,000.

A more stable year and a more profitable one need not and certainly will not mean any let-up in the intense competition in the industry. The manner in which the prices of rubber goods were slashed in 1926 certainly reveals the constant scramble to press every advantage. Goodyear and U. S. Rubber seem destined to continue the fight for first place in point of gross sales, while Goodrich and Firestone will contest for third place.

Rumors of mergers between rubber and automotive companies have been persistent recently but, when connected to particular rubber companies, have invariably been denied by the officials of the companies. The best argument against such mergers is the fact that on account of keen competition in the rubber industry the automobile makers are already getting their original equipment tires so cheap that there would be little or no advantage in their having factories of their own.

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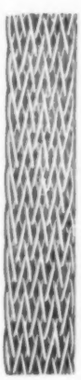

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Rubber in the American Tropics

Fifth Major Government Report Points to Labor Situation as Chief Handicap to Big Rubber Development in Northern Tropical America

The Department of Commerce on March 15 released the last of the major reports resulting from the crude rubber survey which was begun in 1923. With its publication the entire tropical world has been covered. This last report deals with the "Possibilities for Para Rubber Production in Northern Tropical America," the geographic term in this case being taken to mean all of tropical America with the exception of the Amazon valley which was covered in a previous report. Twenty-one separate territories in northern South America, Central America, the West Indian islands and Mexico are covered in this report of almost four hundred pages. The authors are John C. Treadwell, well-known rubber expert, who was in charge of the survey party on behalf of the Department of Commerce, C. Reed Hill, assistant, and H. H. Bennett, a soil expert of the Department of Agriculture.

THE ADVANTAGES and disadvantages of northern tropical America from the standpoint of rubber planting are definite, states the latest rubber survey report of the Department of Commerce. In addition to having in many sections physical conditions unquestionably favorable to the growth and yield of Hevea rubber trees, the strategic position of this region in relation to consuming markets is unequaled. In the matter of a present labor supply, it is perhaps less fortunately situated than any other region climatically suited for rubber.

Judged by climatic records and by existing vegetation, there are many extensive areas in northern tropical America where climatic and soil conditions are favorable to rubber culture. These areas contain some parts, such as swamps and steep hills, which are topographically unsuited for planting; with such parts eliminated, these regions would offer *six million or more acres of land* as suitable for rubber culture as are the lands now used for that purpose in the East.

A fair share of these lands have adequate transportation facilities to seaboard. Their ports are all within eight days' sailing time of United States ports. They are thus approximately a month nearer the principal rubber-consuming market than are the plantations that now supply most of the world's rubber.

Accessible lands suitable for rubber culture can be secured in northern tropical America in large tracts and on reasonable terms by purchase, lease, or concession. The price per acre if bought outright would generally range from $1 to $5 per acre. Some of the American lands have been cleared and now support second-growth jungle, while abandoned banana plantations make up an important acreage; the cost of clearing such lands would be low.

Opposed to the just-named advantages is the fact that labor is scarce and wages comparatively high throughout northern tropical America. The populations are concentrated in the higher altitudes or in districts too dry for rubber. In the lowlands having climatic conditions suitable for rubber the labor is largely migratory and receives from $1 to $1.50 per day as compared with an all-inclusive cost of $0.35 to $0.40 per day per laborer in the Middle East.

Immigration is, of course, the direct way of overcoming such a handicap. Some of the West Indian Islands have the only appreciable quantity of surplus labor in northern tropical America; they could supply but 30,000 to 40,000 workers, however. The importation of laborers from Asia, more especially China, would be the logical solution. The authors of the report believe that certain of the Governments concerned would admit Asiatics under certain restrictions.

While Castilla is indigenous to many of the countries of northern tropical America, the investigators point out that this is not in itself a guide to the regions best adapted to Hevea cultivation, as some of the best brands of Castilla rubber are produced in areas where distinct drought exists over several months of the year. The regions which have climatic conditions favorable to the growth of Hevea rubber are located principally as follows:

The investigators examining a 11-year old Hevea tree in Costa Rica. Native Castilla rubber gatherers have tapped it on the spiral system but bark renewal is now complete. Mr. Bennett is seen on the left, Mr. Treadwell is on the right, and the manager of the estate is in the center of the picture.

1. *Southern Mexico.*—The southern Tabasco-northern Chiapas region, and possibly parts of southern Chiapas, Vera Cruz, Campeche, and Quintana Roo.
2. *Guatemala.*—Portions of the drainage basins of the streams that empty into the Gulf of Honduras and the northern part of the Province of Peten.
3. *Honduras.*—Selected small areas on and near the north coast. Available information concerning the climate in these sections indicates that they may be classed among the marginal lands for Hevea rubber production.
4. *Nicaragua.*—The southeastern part; also a belt skirting the base of the mountains that lie behind the pine lands which extend from near the Mosquito Coast to from 50 to 150 miles in the interior.
5. *Costa Rica.*—A wide east-and-west belt (the San Juan plain) in the northern part draining into the Caribbean through the San Juan River, and south of this a narrower north-and-south coastal belt bordering the Caribbean Sea and reaching to the Panama boundary.
6. *Panama.*—A comparatively narrow belt along the northern coast, broader to the west of the Canal Zone than to the east. Also lands in the Tuyra, Chucunaque, and upper Bayano Valleys, all of which drain into the Pacific and lie in the Province of Darien in the extreme eastern part of the Republic.
7. *Colombia.*—A narrow belt on the Pacific coast; part of the valleys of the San Juan and Atrato Rivers; parts of the upper Sinu Valley; the upper half of the lower navigable portion of the Magdalena River.
8. *Ecuador.*—A belt along the western base of the Andes, extending nearly the length of the Republic.
9. *Venezuela.*—Three areas on or near the northern coast and parts of a large, rather inaccessible area which borders on Brazil and covers the upper drainage basins of the Orinoco and Negro Rivers.
10. *The Guianas.*—The coastal plains and perhaps lower portions of the Guiana highlands.
11. *Haiti.*—Selected areas in various parts of the Republic.
12. *Trinidad.* Small areas in selected parts of the island.

In addition to the regions which have climatic conditions unquestionably suited for rubber there are many others in northern tropical America, the report continues, where the climate differs in some respects from that of established rubber-producing countries and yet is similar enough to warrant consideration of these areas.

When other tropical countries were experimenting with various species of wild rubber plants and deciding upon the superior merits of *Hevea brasiliensis*, plantations which were being established in northern tropical America were confined

Mature Heveas in Southern Mexico, which were abandoned for several years and allowed to go to bush.

almost exclusively to Castilla except in Trinidad and British and Dutch Guiana. The Castilla plantations proved a failure for reasons now well known. Since *Hevea brasiliensis* is not indigenous to northern tropical America and was not as widely planted as Castilla, the investigators were able to secure no extensive or definite evidence of how it would thrive.

Small noncommercial plantings of Hevea are known in Mexico, Nicaragua, Costa Rica, Panama, western Ecuador, Haiti, and Cuba. What is believed to be the largest of these is located at Las Palmas in the State of Chiapas, Mexico, and is reported to have between 40,000 and 50,000 trees.

All of the plantings seen by the survey party were found to be healthy, and until recently none of the trees had been tapped. Experimental tappings have been carried on in plantings at Las Palmas, Mexico, by a private concern and on that at Bayeux, Haiti, by the United States Department of Agriculture. These experiments had not been completed when the report was printed but those in Haiti had proceeded far enough for the investigators to express the opinion that the yield there was nearly as good as in the East.

While large areas of land physically suitable for Hevea cultivation were located by the survey party, the report states as a generality that shortage of labor and high wages would constitute a handicap to extensive development of rubber plantations in competition with the present producing regions in the Middle East. In the latter, the report points out, the basic wage is practically $.20 per day and the total charges (including sanitation, housing, etc.) against labor are from $.35 to $.40, while the prevailing daily wage in the banana districts of Central and South America is as high as $1.00 to $1.50.

There are, however, localities in northern tropical America where wages are lower but in each case the regions are not so well suited for rubber plantation development. Wages in Haiti run from 25 to 30 cents per day but the available acreage of suitable land is small. Wages are lower in some of the upland regions where the thermal conditions are not so good for Hevea. Wages are also lower in some of the drier regions. In any case, the number of laborers available for new projects is not large. Immigration of surplus labor from Haiti and other parts of northern tropical America could not amount to more than thirty to forty thousand. it is estimated.

Opposed to the labor handicap, northern tropical America has certain natural advantages over most of the areas now available for new planting in Malaya and Sumatra. The following are listed in the report:

1. The cost of land is low ($1 to $5 an acre).
2. Transportation facilities have already been arranged in many districts, and others have satisfactory water transportation.
3. The soil in certain areas is superior to that now to be had in the Middle East.
4. There are available some areas clear of virgin jungle and others entirely or nearly clear of second-growth jungle.
5. There are no destructive grasses to combat such as the lallang, or cogon, grass of the East.
6. Some lands have soils and topography suitable for the use of plows.
7. If lands formerly cultivated are used, the hazards from root diseases are nil or greatly reduced.

While climatic and soil conditions in designated regions of northern tropical America are comparable with those of the Middle East and the few plantings of Hevea indicate that the trees will grow well and produce latex, the report offers the warning that the production of rubber per tree or per acre cannot be foretold. It may be more or it may be less than in the East. Disease conditions cannot be foretold.

On account of these uncertainties, the authors suggest that the cheapest methods of planting and bringing the first trees into bearing might be a wise policy. Later plantings could be adjusted to meet new conditions in the light of the experience thus gained.

It would appear that if methods similar to those used in banana cultivation were adopted, rubber on second-growth jungle lands might be planted and brought into bearing with $1 labor at a cost of $150 to $200 per acre. These costs allow for merely slashing the undergrowth, and not for weeding as it is understood in the East.

To the above must be added supervisory and overhead charges, which in the case of abandoned banana lands could be shared by the banana operations carried on separately. In general it is believed by the authors that the entire capital costs on the average could be kept between $150 and $250 per acre, and if the more primitive methods are used and best sites are chosen some areas might be brought into bearing at lower costs. Opposed to these methods, the most intensive methods of the Middle East might be adopted and ultimately prove profitable.

High Cost of Production

While investigators believe that rubber can be brought into bearing at less cost on certain lands in northern tropical America than the present usual cost in the Middle East, the cost of production is admitted to be a most serious problem. What the comparative labor conditions will be five or ten years hence cannot be foretold. The investigators feel that there is every reason to believe that labor and other costs in the Middle East will be higher than at present, but assuming that labor costs in both regions should be unchanged it can be roughly estimated that the cost of production in America will be around 32 cents per pound, as contrasted with 18 to 20 cents in the Middle East at the present time. This is assuming that the upkeep of the American plantations after they come into bearing will be as good as the average of those of the Middle East. However, by lowering the cost of upkeep to the level of that practiced by banana operators, the cost of production might be reduced to 25 cents per pound.

The estimates made above are based on $1 wages and on the standard yields of rubber on the old plantations of the Middle East; but it should be pointed out that with improved methods of seed selection and planting much higher yields, even up to 600 pounds per acre, are possible, in which case the cost on plantations in northern tropical America might be lowered to 20 or 25 cents a pound. This, together with the rising trend in costs in the East, indicates a distinct possibility of establishing plantations on the American continent which will produce rubber on a competitive basis with many Eastern plantations. Great caution is nevertheless required in selecting such areas.

The establishment by foreign capital of rubber plantations of, say, 5,000-acre units in favorable situations throughout tropical America would furnish a basis for the development of native rubber culture. The idea in the case of rubber would be the same as in the case of crops like sugar cane and bananas where natives are encouraged to plant under contract with the so-called "central." This plan to encourage native planting applies not only to Central America but to other countries as well, and especially to Haiti, Santo Domingo, and the Philippines. The aggregate acreage of rubber resulting from such a development might become quite large.

The Effect of Road Surfaces on Auto Tire Wear

Tests of State College of Washington Show That Tire Treads Wear Off About Five Times as Fast on Macadam as on Concrete

IT IS AN easily recognized fact that the mileage rendered by tires depends to a great extent upon the road surfaces on which the tires are used, but it has never been definitely learned to what extent this is true. During the summers of the last three years, the Experiment Station of the State College of Washington at Pullman undertook a series of road tests to determine the relation of tire wear and of gasoline consumption to different types of roads and different speeds. The tests have now been largely completed and preliminary reports have been published.

In the past most of the studies of the relative cost of travel on various types of roads have been based only on the difference in gasoline consumption, but the tests made by Washington College indicate that the consideration of tire wear is equally important. Another very important element is the wear and tear on the car which has not been reduced to figures by any agency.

In making the tests, the college selected roads that were reasonably free from grades, in good average condition and fairly representative of good highway construction. Each car was weighed and the desired load was added. New tires were not used because the sharp corners of the treads wear very rapidly at first, giving an excessive amount of wear in the first hundred miles. Tires and rims were thoroughly cleaned and were deflated. They were then weighed on a sensitive balance graduated in grams. A test run was then made over the given road at a predetermined speed which was maintained as constant as possible during the run. Air temperatures were taken frequently during the run by holding a thermometer from the side of the car in such a manner that it was not affected by warm air currents from the engine.

At the end of each test run, the tires were removed, cleaned and weighed. The difference between the average weight of the four tires before and following the test was taken as the number of grams of tread which had been worn away from each tire. This was carefully recorded with the length of the run. From 50 to 75 miles was discovered to be sufficient for a test, but longer runs were made in many cases.

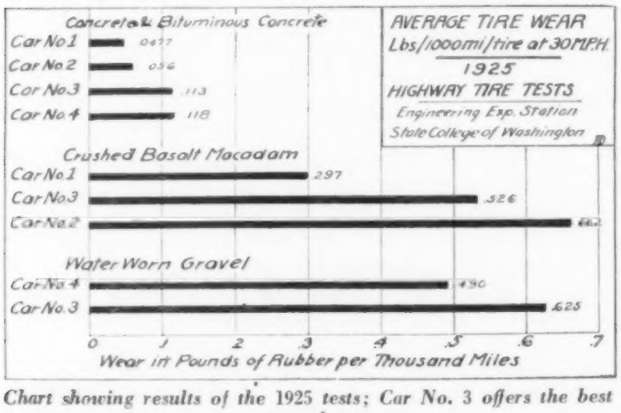
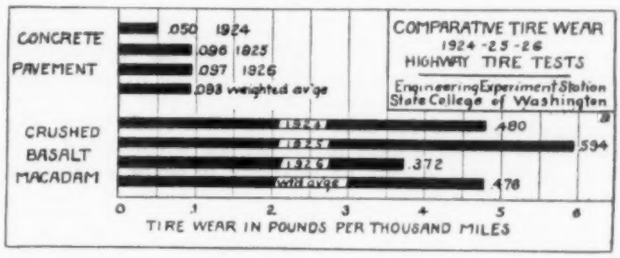


Chart showing results of the 1925 tests; Car No. 3 offers the best comparison.

At the end of each summer a progress report was made, and after the tests had been carried through three summers, the results were brought together in one chart for comparison. A weighted average was also developed to compensate for different conditions which might have affected the data in any one year.

This weighted average showed that on concrete pavement tire wear amounted to .093 pounds per 1,000 miles as compared with .476 pounds worn away in covering the same distance on crushed basalt macadam. In other words, tire wear was about five times as rapid on the macadam as on concrete.



The results are indicated in the chart shown here. These figures are chiefly valuable for comparative purposes; they cover different weight of cars and different sizes of tires.

Since the test runs were made at different speeds, it was also possible to check the effect of speed on tire wear. On macadam road it was noted that tire wear increased in greater ratio at high speeds than at low speeds. The amount of wear was not entirely dependent on speed, however, for it was observed that there was a definite relation between wear and air temperature at a given speed. It was shown that the rate of wear on a day when the temperature was 90 degrees was almost four times the wear when the temperature was 40 degrees.

In the summer of 1924 particular attention was given to both tire wear and gasoline consumption as affected by different types of roads, and some interesting figures were prepared. In one particular test the conditions were as follows:

Type of car	4-cyl., 5-passenger touring
Weight of car loaded	3,500 pounds
Size of tire	33 x 4
Cost of tire	$34.50
Average mileage life of tire on macadam	10,000
Average rubber worn off in life of tire	3.45 lbs.
Cost per pound of rubber worn off	$10.00
Average m.p.g. at 30 m.p.h.	17
Cost of gasoline per gal.	25 cents

On the basis of a speed of 33 miles per hour, the cost in gasoline and tires per 1,000 miles for such a car would be $35.10 on good macadam highway. At the same speed the cost for the same car on concrete would be $12.80, or a difference of $22.30 per 1,000 miles in favor of concrete. The difference per car per mile would be $.0223. Since the annual per mile cost of concrete highways is computed by the state of Washington to be $501.29 greater than that of macadam highways, those in charge of the test conclude that a traffic of at least 22,479 such cars per year, or an average of 62 cars per day, would be necessary to justify the building of concrete highways rather than macadam highways, when only gasoline and tires are considered.

The average tire wear for a car weighing 3,500 pounds at an average speed of 30 m.p.h. was .554 lbs. per tire on macadam and .080 lbs. per tire on pavement per thousand miles, using 33 x 4 tires. Considering the average of all sizes of pneumatic tires for passenger cars, the amount of tread rubber worn off in the life of a tire will approximate 2½ lbs.

In 1926 the State College of Washington selected two identical cars for its tire tests. These were balloon equipped

Oakland coaches, weighing 3,750 lbs. each, with load and driver. At the beginning of the test the 31 x 5.25 tires on Car No. 1 had run 3,900 miles and on Car No. 2, 1,800 miles. The treads showed only a normal amount of wear.

The tests were conducted under conditions of uniform low humidity, as it is a known fact that tires take up moisture very readily when exposed to air of high humidity. This increase in weight as a result of absorbed moisture may sometimes equal the amount of rubber worn off in 100 or 200 miles of travel.

At a speed of 20 m.p.h. on crushed basalt on a test of 43.4 miles an average wear of 19.9 grams, or 1.01 grams per 1,000 miles was noted. On a 51.8-mile test on macadam, the average wear was 14.8 grams, or .63 grams per 1,000 miles. With the same car driven at 30 m.p.h. for 400.4 miles on concrete, the average wear was 20.0 grams, or .110 grams per 1,000 miles.

Tests were also made on oil-treated roads but the results were found to be greatly out of line with the concrete and macadam highway tests on account of the tire treads absorbing oil. Although this absorbent tendency became less after the tires were used for some time on oiled roads, there was no trustworthy adjustment to the delicate weighing tests. It is concluded that it may be necessary to devise other tests to fit the oiled roads.

The tests are not only of interest to tire manufacturers and distributors but have also the greatest influence on good roads propaganda in this country. The following conclusion is significant:

If the average cost of tires in terms of pounds of tread rubber which is worn off the tires during their service be taken as $10.00 per pound, a traffic of 500 cars per day on a good crushed rock highway will cost the motorists $2,590 in tires per mile of highway per year. The cost on good concrete pavement would be $672 per mile. The saving per year on the concrete would be $1,918 per mile. Experience in the state of Washington has shown that the total annual cost per mile of concrete road is $1,840 if the first cost be amortized over 25 years. From the standpoint of tires alone, therefore, it is worth while for the motorists to insist that concrete construction be adopted instead of macadam when new highways are to be built, provided that 500 cars will pass over them per day.

Changes in Footwear Marketing

The marketing system of rubber footwear seems to be due for a general revision, and already there are signs of breaking away from the methods in vogue for over a half a century. Except at times of sudden fluctuations in basic raw materials or wartime labor conditions, winter rubber goods have always been priced once a year, on January 1, for the following season. The salesman started out after the first of the year with his line of samples and booked the retailer's fall order for the goods to be retailed the following winter. By April 1 the salesman had completed his circuit and went off the road until September 1 when he repeated the same performance with the tennis line.

In the last few years, however, the salesman has found that the shoe retailer is slipping more and more away from placing his advance order early. In fact, during the past season, many orders for winter delivery were not booked until late fall. This vogue of hand-to-mouth buying and the introduction of footwear specialties such as hunting, sporting, and fishing numbers have made the distribution more of a year round proposition, and it is now general practice to cover the territory at regular intervals the year round.

Inflates Four Tires at Once

At the factory of the Olds Motor Works, Lansing, Mich., all four tires on Oldsmobile sixes are inflated at once by means of an air hose with four outlets. Each outlet is equipped with a nipple which fits over the valve stem. After the tires have been inflated, they are carefully tested. It is said that two men can inflate the tires on 500 cars in a day.

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The London Letter

The GENTLEMAN FROM MINCING LANE will report current opinion in London's famous rubber market in every issue of THE RUBBER AGE

This Week the Gentleman Talks About An Anchor to Windward.

LONDON, March 11, 1927.

"ONE IS almost driven to assume that instead of working for stability, they (the American manufacturers) are short-sightedly looking to a sharp rise in the price of rubber to stimulate consumer buying, and are not worrying about the more far-reaching effects of a cut in exports to 60 per cent on May 1. It appears to me that producers can be assured of higher prices for the smaller crops exportable this year," said Mr. Eric Miller at the recent annual meeting of the Bah Lias Rubber Estates.

The manufacturers might reply that what goes up must come down and that they do not intend to let rubber prices run away again as they did in 1925. Assuredly no rubber manufacturer would welcome the rapid fall in raw rubber prices which almost inevitably must follow a rapid rise, but competition is fierce enough today to warrant cautious treading in the crude rubber market. Stability is as much desired as ever but there is no doubt a limit beyond which individual manufacturers feel they cannot go in achieving it.

I note that Mr. Miller puts an "almost" in his sentence quoted above. That word will likely disappear with the advent of 60 per cent restriction on May 1 when the British producers will be none too happy over seeing their exports cut down when the Dutch are getting 40 cents or more on full output. Mr. Miller is also very neatly throwing an anchor to windward—I hope my nautical metaphor is accurate, even if not technically correct—so as to have some solid line of argument *to prove who is to blame should rubber prices run away again.*

Note also Mr. Miller's confident expectation that "producers can be assured of higher prices for the smaller crops exportable this year." This touches the same fundamental question to which I referred two weeks ago: will the world's rubber requirements in 1927 be no greater than what can be produced with the British territories on a 60 per cent basis for eight months of the year?

A WRITER IN *Truth*, a London weekly, offers the opinion that the stocks of rubber in London—now amounting to almost 60,000 tons—are held as follows: 15,000 tons for American account, including pool holdings, I suppose; 25,000 by the growers; and 15,000 tons by dealers and bankers against forward sales. This is a rather interesting commentary on the extent to which American, and other, manufacturers have come forward to support the rubber market and give it the stability which Mr. Miller "almost" doubts their desire to secure.

The average price of raw rubber in London in February was a fraction over 19d. Today's price is 20d. One wonders if the Americans have changed their minds and are beginning an upward movement to secure an average price of 21d. for the quarter ending April 30. The price will have to be pushed up rapidly to more than 23d. for the balance of March and through April in order to arrive at this consummation. But there does not seem to be much chance of a 21d. average for the quarter. Instead of being due to artificial support from America, the recent strength in the rubber market is more likely due to the reduced February shipments from Malaya, causing increased speculative buying of raw rubber, and some improvement in American trade buying.

Furthermore, the rapid reduction in the outstanding unused export credits gives definite promise of the tightening up of restriction. The unused coupons for Malaya decreased from 58,000 tons at the end of November to 19,000 tons at the end of January; Ceylon had surplus coupons at the middle of January equal to about 15,000 tons.

ANOTHER interesting announcement which has come out in the past fortnight was made by the Colonial Secretary, who stated that "so long as the conditions under which the present scheme is operating remain substantially the same, such, for instance, as the area of restriction, I do not propose to suggest to the Governments in Ceylon and Malaya that they should suspend their restriction measures or that the regulations now in force should be materially modified." The feeling has definitely gained ground in London that the much desired 12 months notice, before the restriction scheme is to be dropped, can be relied upon although there is nothing definite or tangible on which to pin one's belief. Certainly, the Government has made as tangible an announcement as they could, considering the situation of Ceylon, in order to shelter the rubber market from unexpected and sudden changes in policy.

It is also interesting to note the announcement that there is to be a meeting of Colonial Governors in London next May. No agenda has been announced; possibly rubber may be included thereon.

The Board of Trade has put out some interesting figures in connection with their census of the production of the British rubber manufacturing industry in 1924. The figures are preliminary, only those having to do with rubber tires and rubber footwear being complete enough for accurate comment. The British production of pneumatic outer covers for motor cars in 1924 amounted to some 1,927,100 casings, valued at about $23,600,000. One million dozen pairs of rubber footwear were produced, worth something over $5,125,000. Total production of the British rubber manufacturing industry was valued at £23,309,000, or around $112,000,000 in American currency. No similar information is available for the last two years.

Yours faithfully,

THE GENTLEMAN FROM MINCING LANE.

Good Demand for Crude Rubber Continues

Reports of Rubber Association Exert Depressing Effect for Three Days, but Market Again Rallies to 42 Cents

New York, March 17, 1927—Good demand undoubtedly played the greatest part in raising the price of crude rubber to over 42 cents during the last two weeks, proving that consumption continues to be the controlling factor in the situation. When this demand fell off the market receded, and when factory orders were again received, prices rallied almost magically.

A Singapore estimate that world consumption this year would exceed production was received skeptically. This estimate put the outputs from the Dutch Colonies at 120,000 tons for estates and 70,000 tons, dry, for native rubber, a total of 190,000 tons for the Netherlands East Indies. Total production of Ceylon and Malaya was put at 270,000 tons, and output from all other sources placed at 82,000 tons, making a world production of 542,000 tons. The carryover from 1926 was estimated at 65,000 tons, and total consumption 570,000 tons, leaving a balance at the end of 1927 of 37,000 tons.

Figures of the Department of Commerce showing shipments from the Far East for the week ended March 5 were the largest on record, totalling 9,711 tons, of which amount 2,095 tons were shipped from Colombo.

A week ago the reappearance of manufacturing interest and improved London cables halted a decline in prices after three days of recessions. Buying support was said to have come from prominent operators who had been withholding purchases in anticipation of further decline. May led the activity, followed by July and October which found commission house support. A sharp rally also took place in Paras after several days of weakness. A firm London market and broad implications from three tire manufacturers that tire prices might be advanced in the near future kept the market strong on subsequent days. Most of the interest on the Exchange was shown in summer deliveries, particularly June and July. Switching from March to July brought a premium of 180 points.

After three days of advancing prices, the bull interests received a severe shock from the reports of the Rubber Association showing stocks on hand, consumption and imports. Stocks of crude rubber on hand at the end of February, represented an increase of 17,086 tons over January, being reported as 81,186 tons. Consumption of 30,137 tons, a decline of 1,363 tons, together with a drop of 3,034 tons in rubber afloat to United States ports, were bullish items, but they did not offset the effect of the heavy increase in stocks. Traders on the Exchange sold May, June and July positions for losses of ½ cent and buying power dwindled further on lower London cables. The market was quiet the following day and further slight declines were recorded.

MARCH 17 OPEN MARKET PRICES

Plantations—			
Ribbed Smoked Sheets			
Spot	.41¾	@	.42
March	.41¾	@	.42
April	.42	@	.42¼
April/June	.42½	@	.42¾
July/September	.43¼	@	.43½
October/December	.43⅞	@	.44¼
First Latex, crepe spot	.42½	@	.42½
Amber Crepe, No. 2, spot	.38¾	@	.39
" " No. 3	—	@	.38¼
" " No. 4	—	@	.38¼
Brown Crepe, Rolled	.35⅛	@	.35½
" " Clean, thin	.38¾	@	.39
" " Specky	—	@	.38
Liquid Latex, per gal.	1.50	@	1.75
Pontianac—			
Bangermassin	—	@	.17½
Palembang	Nominal		
Prime Pressed	—	@	.27¾
Sarawak	—	@	.17½
Paras—			
Up-river Fine	.33	@	.33½
" Medium	.26	@	.26½
" Coarse	.25	@	.25½
Acre Bolivian, fine	.32½	@	.33½
Tapajos, fine	.28½	@	.29½
Cut Beni Bolivian, fine	Nominal		
Caucho Ball—			
Upper, shipment	.25½	@	.26
Centrals—			
Corinto, scrap	.25	@	.26
Esmeraldo, sausage	.22½	@	.23
Guayule, w and d	.33	@	.34
Africans—			
Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
" " red	Nominal		
Balata—			
Block, Columbia	.39	@	.40
" Cuidad	.37½	@	.38
Surinam, sheet	.73	@	.75
Gutta Percha—			
Siak	—	@	.30½
Red Macassai	—	@	3.00

LONDON MARKET

Standard Ribbed Smoked Sheets—*Buyers*	
Spot	20⅜d
March	20⅜
April/June	20⅜
July/Sept.	21⅜
Oct./Dec.	21⅜

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—*Sellers*	
Spot	20¼d
March	20⅜
April/June	20⅜
July/Sept.	21¼

Yesterday, however, prices returned to the 42 cent level on an advance of ⅛ cent in the outside market and 10 to 60 points on the Exchange. Spot and March positions were held firmly at 42 cents in the street.

RECLAIMED RUBBER

New York, March 18, 1927—Demand for reclaimed rubber has shown much improvement in the past two weeks, reclaimers reporting that factories are actively in the market for supplies. In some instances far future orders have been placed. Production of reclaims is said to be near capacity in most of the plants. Shipments on old orders have been continuing at a satisfactory rate. Prices have changed but little.

High Tensile Black			
Super-Reclaim No. 1 lb.	.19	@	.20
" " No. 2 lb.	.16	@	.17
Shoe			
Unwashed lb.	.08¾	@	.09
Washed lb.	.11¾	@	.12
Tube			
No. 1 (Floating) lb.	.19½	@	.20
No. 2 (Compounded) lb.	.15	@	.16
High Tensile Red	.15½	@	.16
Tires			
Black, washed lb.	.10¾	@	.11
Black, unwashed	—	@	—
Black selected tires lb.	.10¼	@	.11
Dark Gray lb.	.12	@	.13
Light Gray lb.	.14	@	.14½
White lb.	.17	@	.17½
Truck, Heavy Gravity lb.	.09	@	.09½
" Light Gravity lb.	.10	@	.10¼
Miscellaneous			
Mechanical Blends lb.	.08	@	.09
Red lb.	.15½	@	.16

SCRAP RUBBER

New York, March 18, 1927—Low stocks of scrap rubber have tended not only to keep prices firm, but have resulted in advances in several instances, particularly in tire grades. Accumulations, despite the early spring, have been very slow in reaching the hands of dealers. There has been a slight improvement in demand, and dealers are optimistic concerning the trend of the market in the second quarter.

[*Prices to Consumer*]			
Auto tire peelings ton	40.00	@	41.00
Standard White auto ton	57.50	@	60.00
Mixed auto ton	27.00	@	28.00
Bicycle tires ton	26.00	@	27.00
Clean solid truck tires ton	36.00	@	37.00
Boots and shoes	.02¼	@	.02¼
Arctics, trimmed	.01⅝	@	.01⅝
Arctics, trimmed	.07⅝	@	.01⅝
Inner tubes, No. 1	.09⅜	@	.09½
Inner tubes, No. 2, compounded	.07¼	@	.07⅜
Air Brake Hose ton	37.50	@	39.00
Rubber hose ton	18.00	@	20.00

Closing Prices on Rubber Exchange of New York, Inc.

MARCH 4 TO 17

	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	SALES*
March 4	39.90	40.70	41.20	41.60	41.80	42.10	42.30	42.60	42.70	42.90	43.20	43.50	341
5	40.60	41.00	41.50	42.00	42.30	42.30	42.60	42.90	43.10	43.30	43.50	43.70	174
7	40.40	40.90	41.40	41.70	42.00	42.20	42.40	42.70	42.90	43.10	43.30	43.50	263
8	40.20	40.80	41.30	41.60	41.80	42.10	42.50	42.80	42.90	43.10	43.30	43.50	274
9	40.10	40.60	41.00	41.50	41.70	42.10	42.50	42.70	42.90	43.10	43.30	43.50	319
10	40.20	40.90	41.40	41.60	42.00	42.30	42.70	43.00	43.20	43.40	43.60	43.80	228
11	40.50	41.20	41.70	——	42.40	42.60	42.70	43.00	43.20	43.40	43.60	43.80	297
12	41.30	41.60	42.00	42.40	42.80	42.90	43.00	43.20	43.40	43.60	43.80	44.00	276
14	41.30	41.60	41.70	42.00	42.40	42.50	42.70	42.90	43.10	43.20	43.50	43.70	295
15	41.20	41.40	41.60	42.00	42.20	42.50	42.70	42.90	43.10	43.30	43.50	43.70	229
16	41.30	41.90	42.10	42.50	42.80	42.90	43.00	43.10	43.30	43.50	43.70	43.90	284
17	41.00	41.60	41.80	42.10	42.50	42.70	42.90	43.10	43.20	43.20	43.40	43.60	153

(*) In lots of 2½ tons each; totals are for old and new contracts.
(Prices are for new contracts)

THIS MONTH'S SPECIALS

1—Adamson and one Vaughn 24″x66″ Calender.
1—Allen 12″ Tuber.
2—Werner & Pfleiderer 100 gallon Mixers.
3—Royle No. 2 and No. 3 Tubers.
4—Farrel 48″ and 60″ Mills.
2—Birmingham 54″ Mills.
1—Farrel 18″x40″ 4-roll Calender.
1—Farrel 18″x48″ 3-roll Calender.
5—Birmingham 42x42″ hydraulic Presses.
6—Spreaders, various sizes.

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42″ and 62″ Cameron Slitting Machine.
24″ x 24″ Southwark, Vaughn and Hydraulic Press Mfg. Co.'s Hydraulic Presses.
20″ x 22″ x 60″ Vaughn Individual Mill Unit with Motor and Drive.
24″ x 66″ Birmingham and Allen Calenders.
Hydraulic Belt Presses, Single and Double Ram.
Werner & Pfleiderer No. 15 Jacketed Mixer.
50 Gal., 75 Gal., 100 Gal. and 200 Gal. Day and Ross Cement Churns.

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Sanitary Elastic Belts	Crib Sheets
Sanitary Bloomers	Bathing Caps
Sanitary Stepins	Rubber Specialties
Powder Puff Pockets	Rubberized Sheeting
Rubber Gloves	Hot Water Bottles

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Rubber Chemical Market Continues Active

Withdrawals on Contracts are Proceeding at a Rate that Augurs Well for Total March Sales and Some Plants have Doubled Orders

NEW YORK, March 17, 1927— Many important rubber chemicals are moving at a steady rate; withdrawals on contracts during the past two weeks indicate that March will be an excellent month for most of the chemical houses that are specializing in supplies for the rubber industry. Some factories have even doubled their usual withdrawal orders, and this fact, more than many optimistic indications, is a confirmation of the production reports received from Akron. Practically all the orders for April deliveries have already been placed, and these show little variation from current delivery schedules. Few important price changes have been made recently, and there has been practically no shading of quoted prices. The firm undertone that characterizes the market is expected to hold prices firm throughout the second quarter.

Current prices of some of the rubber chemicals are given below. It will be seen that the changes have been unimportant.

ACCELERATORS

Organic

A-7	lb.	.70 @	—
A-40	lb.	.70 @	—
A-19	lb.	.75 @	—
A-11	lb.	.75 @	—
Aldehyde ammonia, crystals	lb.	.80 @	.82
Aniline oil, drums	lb.	.17 @	.17⅛
"BB"	lb.	— @	—
Captax	lb.	— @	—
Crylene	lb.	.70 @	—
paste	lb.	.50 @	—
Di-Ortho-Tolylguanidine	lb.	.85 @	.90
Diphenylguanidine	lb.	.68 @	.72
Ethylidene aniline	lb.	.60 @	.65
Excellerex	lb.	.35 @	.40
Formaldehyde Aniline	lb.	.38 @	.42
Grasselerator 102	lb.	.80 @	.82½
Grasselerator 552	lb.	4.80 @	5.00
Grasselerator 808	lb.	1.15 @	1.35
Heptene	lb.	.55 @	—
Hexamethylene-tetramine	lb.	.80 @	.82½
Monex	lb.	3.25 @	—
Paraphenylenediamine	lb.	1.25 @	1.50
Piperidine-Piperidyldithio-Carbamate	lb.	4.80 @	5.00
R & H 50	lb.	.60 @	.65
Super-Sulphur No. 1	lb.	— @	—
Super-Sulphur No. 2	lb.	— @	—
Tensilac, No. 41	lb.	.65 @	.68
Thiocarbanilide, kegs	lb.	.26 @	.28½
Trimene	lb.	.75 @	—
base	lb.	1.20 @	1.35
Triphenylguanidine	lb.	.69 @	.73
Tuads	lb.	— @	—
Vulcone	lb.	.75 @	.79
Z. 88	lb.	.75 @	1.00
Zimate	lb.	— @	—

Inorganic

Lead, sublimed blue	lb	.10 @	.10⅛
Lead, white	lb.	.09¾ @	—
Litharge, domestic	lb.	.10¼ @	—
Magnesia, calcined, light	lb.	.06½ @	—
heavy	lb.	.04½ @	—

COLORS

Blacks (See Compounding Materials)

Blues

Prussian	lb.	.33 @	.35
Ultramarine	lb.	.08 @	.35

Browns

Siena, Italian	lb.	.04 @	.08
Umber, Turkey	lb.	.04 @	.06

Greens

Chrome, light	lb.	.27 @	.31
medium	lb.	.29 @	.32
dark	lb.	.31 @	.34
Chromium Oxide, bbl.	lb.	.31 @	.38

Reds

Antimony crimson, 15/17	lb.	.27 @	—
sulphur free	lb.	.48 @	.50
golden 15/17 F.S.	lb.	.16 @	.22
Indian English	lb.	.08 @	.10
Oximony	lb.	.13¼ @	—
Para toner	lb.	.13 @	.14
Red oxide, reduced	lb.	.10 @	.11
pure	lb.	.14 @	.15
Toluidine toner	lb.	1.75 @	1.85
Venetian red	lb.	.01½ @	.05
Vermillion, quicksilver, English	lb.	1.55 @	1.65

Whites

Lithopone, Akcolith	lb.	.05¾ @	.06
Lithopone, Azolith	lb.	.05¾ @	.06⅛
Lithopone, Vanolith	lb.	.10½ @	—
Titanox	lb.	.12 @	.12½
Calc. Base Pigment	lb.	.10½ @	.11
Zinc Oxide—American Process			
American Azo:			
ZZZ (lead free)	lb.	.07¾ @	—
ZZ (under 5% leaded	lb.	.06⅝ @	.06⅞
Zinc Oxide—French Process			
White seal	lb.	.11⅝ @	—
Green seal	lb.	.10⅜ @	—
Red seal	lb.	.09⅜ @	—

Yellows

Chrome	lb.	.17 @	.18
Ocher, French medium	lb.	.03 @	.03¼
domestic	lb.	.01⅝ @	.02

COMPOUNDING MATERIALS

Aluminum Flake (f.o.b. plant)	ton	21.85 @	24.50
hydrate light	lb.	.16½ @	.17
Ammonia carbonate	lb.	.13½ @	.14
Are-O-Sel	ton	8.00 @	11.00
Asbestine	ton	14.75 @	18.00
Barium carbonate	ton	50.00 @	52.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	12.00 @	18.00
Western prime white	ton	23.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½ @	—
Blacks			
Arrow "Aerfloted"	lb.	.08 @	.12
Bone Black	lb.	.05½ @	.11
Carbon, compressed	lb.	.07½ @	.11½
uncompressed	lb.	.07 @	.11
Drop Black	lb.	.06 @	.10
Lamp "	lb.	.12 @	.40
Micronex	lb.	.08 @	.12
Thermatomic carbon	lb.	— @	—
Velvetex carbon	lb.	.04 @	.07
Blanc fixe dry f.o.b. works	lb.	.04 @	—
Carrara filler	lb.	.01¾ @	.02
Catalpo (fact.)	lb.	.02 @	—
Chalk	lb.	.02½ @	.04½
Clay, China, domestic	ton	8.00 @	9.00
Aerfloted Suprex	ton	9.00 @	20.00
Blue Ridge, Dark	ton	— @	—
" " Light	ton	— @	—
Dixie	ton	— @	—
Langford	ton	— @	—
Mineral Flour, c. l. fob mine	ton	20.00 @	23.00
Tensulite		15.00 @	—
Glues, extra white	lb.	.20 @	.29
medium white	lb.	.19 @	.25
common bone	lb.	.14 @	.15
Graphite flake, bbls.	lb.	.06½ @	.10
Magnesia, carbonate	lb.	.07 @	.09
Mica, powdered	ton	65.00 @	80.00
Rotton Sone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.30 @	3.70
Talc, domestic	ton	16.00 @	18.00
Terra Alba	cwt.	1.15 @	1.75
Tripoli, white	lb.	.01¾ @	.02
Whiting, commercial	cwt.	.85 @	1.00
English cliffstone	cwt.	1.50 @	—
Quaker	ton	— @	—
Superfine	ton	10.00 @	12.00
Sussex	ton	— @	—
Vansulite	ton	12.50 @	—
Wood pulp XXX	ton	45.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	— @	—
Hydrocarbon, Hard	ton	— @	—
Hydrocarbon, Soft	ton	— @	—
320/340 M.P. hydrocarbon (c. l. factory)	ton	47.00 @	52.00
300/310 M.P. hydrocarbon (c. l. factory)	ton	42.00 @	47.00
Paradura	ton	70.00 @	72.50
Robertson, MR, solid	ton	35.00 @	75.00
M.R. (gran)	ton	42.00 @	80.00

SOFTENERS

Acids

Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulphuric, 60 degrees	ton	10.50 @	11.50
66 degrees	ton	15..00 @	16.00
Tartaric, crystals	lb.	.31½ @	—

Acids, Fatty

Stearex	lb.	.10 @	.14
Stearic, single pressed	lb.	.10 @	.11
double pressed	lb.	.12 @	.13
triple pressed	lb.	.14 @	.15

Alkalies

Caustic soda, 76%	cwt.	3.50 @	—
Soda ash, 58% C.L.	cwt.	1.42½ @	1.45

Oils

Castor, No. 3 bbls.	lb.	.13¾ @	—
Corn, crude, bbls.	lb.	.09¾ @	.10
refined	lb.	.11 @	—
Cottonseed, crude		.08 @	—
Cycline	gal.	.26 @	.34
Fluxrite	lb.	.05 @	.06
Glycerine, C.P. drums	lb.	.26 @	.26½
Linseed, RawC.L. bbl.	lb.	.09½ @	—
Moldrite	lb.	.05 @	.06
Palm Lagos	lb.	.08⅝ @	.08¾
Niger	lb.	.08 @	.08⅛
Vansulol	lb.	.10½ @	—
Peanut,domestic,crude	lb.	.11 @	—
Petrolatum, white	lb.	.08⅞ @	.09
amber	lb.	.03¾ @	.04
dark amber	lb.	.03⅜ @	.03½
Pine, steam distilled	lb.	.70 @	—
Rapeseed, refined	gal.	.81 @	.83
Rosin, first rectified	gal.	.70 @	—
second rectified	gal.	.73 @	—
Synthecite	lb.	.06 @	—

Resins and Pitches

Pitch, Burgundy	lb.	.06½ @	.07⅛
coal tar	gal.	.05½ @	.06
pine	bbl.	9.00 @	10.00
Rosin, grade K	bbl.	13.00 @	—
Pigmentar	gal.	.33 @	.41
Tar Retort	bbl.	15.50 @	16.00
kiln burned	bbl.	16.00 @	16.50

Solvents

Acetone, pure	lb.	.12 @	.14½
Alcohol denatured, No. 1 bbls.	gal.	.37½ @	.44½
Benzol, 90%	gal.	.23 @	—
pure		.24 @	—
Carbon bisulphide	lb.	.05½ @	.06¼
Carbon tetrachloride		.06¾ @	—
Motor gasoline, steel bbls.	gal.	.21 @	—
Naptha, V. M. & P.	gal.	.16¾ @	—
Turpentine, spirits	gal.	.78 @	.79
wood	gal.	.72 @	.73

Waxes

Beeswax	lb.	.39 @	.40
Carnauba, No. 1	lb.	.60 @	61
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06 @	.06⅛
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30

ANTI-OXIDANTS

Age-Rite	lb.	— @	—
Antox	lb.	.88 @	—
VGB	lb.	.66 @	—

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.10 @	.16
Brown	lb.	.10 @	.15

VULCANIZING INGREDIENTS

Ethyl Chloride, Cyl.	lb.	.34 @	—
" Drums	lb.	.24 @	—
Sulphur Chloride (drums)	lb.	.03½ @	.06
Sulphur flour			
Superfine, bags	cwt.	2.20 @	2.80
" bbls.	cwt.	2.55 @	3.10
100% pure, refined, bags	cwt.	2.60 @	3.15
bbls.	cwt.	2.95 @	3.50

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Tire Fabrics Unaffected by Cotton Prices

Although Weaker Cotton Quotations Have Had Some Influence in Reducing Inquiries, Firm Undertone in Fabrics Continues

New York, March 17, 1927—Despite the fact that cotton quotations have eased off considerably during the past few weeks, tire fabric prices have shown but little change, due both to the large quantity of orders on hand with mills and the firmness of extra staple cotton. The only effect of weaker cotton prices on the tire fabric market has been to reduce the number of inquiries for second and third quarter deliveries. Business placed recently was mostly of a filling-in nature and orders for last quarter requirements have been few.

Both mills and factors are optimistic regarding the volume of business yet to be placed, for they expect greatly increased spring business this year with tire manufacturers, as stocks in dealers' hands are known to be low. Consumption of tire fabrics this spring and summer is expected to touch new high levels, and the knowledge that several large tire manufacturers are producing their own fabrics has had no effect in dampening the sentiment of mill executives.

Irregularity in quotations was not as apparent during the first few weeks in March as it was toward the close of February, due, probably, to the size of inquiries, which offered little temptation to mills to shade prices to secure the business from their competitors. Inquiries in most cases were for quantities around 50,000 pounds, and none were reported for over 150,000 pounds.

Cotton Reacts to Lower Levels

The reaction of cotton during the past two weeks was attributed to the fact that prices had advanced to an attractive point for southern holders and one that was regarded as unlikely to bring about any reduction in new crop acreage. Mills which had replenished their stocks were not actively in the market and, with the falling off in demand from this quarter, southern hedge selling became sufficiently active to exert a depressing influence.

Though trade support was less active, the volume of spot sales continued to proceed at a good rate, and sellers did not appear inclined to make concessions. Having shown their ability to carry the surplus production through a most trying period, there was no good reason for them to develop weakness at this time, particularly as prices are still low and reports from the world's principal textile centers point to an exceptionally heavy consumption during the next few months.

According to A. Norden & Co., the world's mill consumption of American cotton during the six months ended Jan. 31 amounted to 7,224,000 bales, compared to 6,974,000 in the corresponding period of 1925-26, an increase of only 250,000 bales. This fails to support the widely accepted view that this season's total consumption will be in excess of 15,000,000 bales. But the world's present rate of spindle activity is considerably greater than the average for the last half of the season and optimistic expectations regarding consumption during the twelve months ending July 31 may yet be realized.

Sheetings

The market for sheetings was fairly active during the past two weeks, with quotations in most cases firm, but a little shading was done by some mills on large inquiries. March and April deliveries seemed to be as far ahead as most buyers cared to go in placing commitments. In many cases low bids were refused when they called for nearby deliveries.

Ducks

A number of mills advanced enamelling duck to a basis of 30 cents a pound for single filling narrow widths, and hose and belting ducks were firm at 29 cents. A number of mills were unable to satisfy calls for spot deliveries, due to the activity of looms on future orders. Most mills found themselves in a better position than they have experienced in some months, with orders on hand calling for maximum operations for at least 30 days and in some cases 90 days ahead.

Current COTTON and FABRIC *Quotations*

COTTON CLOSING PRICES

	Open	High	Low	Close Mar. 17	Close Mar. 3
March	13.82	13.82	13.66	13.67	14.34
May	14.00	14.00	13.77	13.79	14.44
July	14.08	14.09	13.94	13.97	14.61
October	14.26	14.28	14.10	14.13	14.76
December	14.43	14.43	14.27	14.29	14.90

TIRE FABRICS

CORD			
Peeler, carded, 23/5/3	lb.	.36 @	.37
Peeler, carded, 23/4/3	lb.	.37½ @	.38
Peeler, carded, 13/3/3	lb.	.34 @	.34½
Peeler, carded, 15/3/3	lb.	.34½ @	.35½
Egyptian, carded, 23/5/3	lb.	.43 @	.44
Egyptian, combed, 23/5/3	lb.	.48 @	.49
CHAFERS			
Carded American, 8 oz.	lb.	.34½ @	.35½
Carded American, 10 oz.	lb.	.35½ @	.36½
Carded American, 12 oz.	lb.	.36 @	.37
Carded American, 14 oz.	lb.	.36½ @	37
LENO BREAKER			
Carded American, 8¼ oz.	lb.	.35 @	.36
Carded American, 10¼ oz.	lb.	.36½ @	.37½
SQUARE WOVEN			
Carded American, 17¼ oz. 13-11 ply	lb	.37 @	.38
Carded American, 17¼ oz. 10-5 ply	lb.	.34 @	.35

SHEETINGS

40-inch 2.50-yard	yd.	.11¼ @	.11½
40-inch 2.85-yard	yd.	.11 @	—
40-inch 3.15-yard	yd.	.10⅝ @	.10¾
40-inch 3.60-yard	yd.	.09¼ @	.09½
40-inch 3.75-yard	yd.	.08 @	.08⅛
40-inch 4.25-yard	yd.	.07 @	—

DUCKS

Belting and Hose	lb.	.29 @	.29½
Enameling	lb.	.30 @	.34
Sloe Ducks	lb.	.29½ @	.33½
Single filling	lb.	.12 @	.15
Double filling	lb.	.14½ @	.16

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STATISTICAL SECTION

TIRES & TUBES
CRUDE RUBBER

AUTOMOBILES
GASOLINE

A REMARKABLE increase in the stocks of rubber on hand in the United States is shown in the table on page 619. This stock, according to figures prepared by the Rubber Association, is larger than has been held at the end of any month in 1925 or 1926. Stocks afloat to this country decreased somewhat but not sufficiently to spoil the pleasing stock situation which these figures reflect.

On the same page is shown a table which reveals that the stock of rubber in London, and in Singapore and Penang as well, continues to increase. The London stock is now the largest that it has been since March, 1923. Whether it will continue to increase is problematical, and depends largely upon the course that is taken by rubber consumption in the United States.

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available. The section accordingly affords the most up-to-date, complete and convenient statistical service in the industry.

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The consumption table in this section has now had the February figures added to it, and it is seen that the American factories are using a little less than they did in the first two months of 1926. However, their consumption so far this year has been well over 1,000 tons per day.

The rubber price tables on the next page trace the strength that has been developing in the market from day to day. The New York price is approaching the 42 cent level, and London has been consistently over 20 pence for almost a fortnight.

A considerable improvement has been made in the rubber production table on page 620. A column for "All Other" has been added so that the total is now really comprehensive and trustworthy.

U. S. Imports and Exports of Crude Rubber.

YEARS	Gross Imports: Long Tons	Gross Imports: Total Declared Value	Gross Imports: Average Declared Value per pound Cents	Re-exports: Long Tons	Re-exports: Total Declared Value	Re-exports: Average Declared Value per pound Cents	Net Imports: Long Tons
1921	185,394	73,773,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,281,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1925:							
Jan.	32,898	22,406,756	30.41	1,162	963,593	37.02	31,736
Feb.	34,696	18,532,115	33.50	979	779,406	35.53	33,717
Mar.	33,072	25,146,691	33.94	1,345	1,105,119	36.69	31,727
Apr.	32,506	24,874,562	34.16	1,130	1,009,305	39.86	31,376
May	36,932	30,311,754	36.64	1,203	1,323,445	49.12	35,729
June	31,569	26,855,883	37.98	1,198	1,577,106	58.75	30,371
July	32,455	33,701,723	46.36	1,278	2,132,661	74.52	31,177
Aug.	33,413	39,834,348	53.22	1,131	1,623,258	64.08	32,281
Sept.	36,367	36,686,013	62.11	1,154	1,820,360	70.41	25,213
Oct.	34,651	50,027,338	64.45	1,132	1,989,291	78.43	33,519
Nov.	37,755	56,271,963	66.54	1,605	2,898,930	80.65	36,150
Dec.	40,329	65,055,868	72.02	1,510	2,625,259	77.61	38,819
	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926:							
Jan.	42,404	72,528,151	76.38	2,084	3,747,505	80.28	40,320
Feb.	32,865	58,733,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,234	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May	29,756	36,896,080	55.35	1,052	1,558,987	66.17	28,704
June	24,900	34,498,561	61.85	1,105	1,371,217	55.41	23,795
July	35,820	33,061,470	41.20	1,554	1,743,854	50.09	34,266
Aug.	27,400	24,670,752	40.21	1,318	1,339,563	45.38	26,082
Sept.	37,112	32,625,032	39.02	1,437	1,519,870	47.20	35,675
Oct.	29,333	25,300,483	38.50	1,366	1,316,270	43.02	27,967
Nov.	38,925	34,661,631	39.97	1,482	1,320,461	42.00	37,443
Dec.	37,754	33,261,366	39.33	1,904	1,841,305	43.16	35,850
	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1927:							
Jan.	43,340	36,753,719	37.99	1,526	1,444,734	42.22	41,814
Feb.	27,902*		36.89				

*Official estimate based on arrivals at N. Y. and Boston.

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

	1921	1922	1923	1924	1925	1926	1927
January	5,045	16,938	30,106	29,058	29,638	32,196	31,518
February	5,955	14,767	30,149	25,736	29,761	31,136	30,189
March	9,190	21,408	36,629	28,385	33,498	32,936	
April	13,084	19,294	29,085	27,129	34,139	32,696	
May	16,023	23,246	36,155	25,845	35,322	29,364	
June	16,142	31,713	24,272	22,753	35,822	28,598	
July	18,310	24,522	17,685	23,396	36,059	27,577	
August	23,649	29,361	20,359	28,982	35,909	34,533	
September	16,705	24,410	17,594	31,497	31,691	32,904	
October	16,814	26,881	21,321	31,520	29,047	29,836	
November	14,105	24,950	20,437	27,289	28,853	28,080	
December	15,482	25,070	21,902	27,199	28,748	26,293	
TOTALS	170,504	282,560	305,694	328,769	388,481	366,149	

Figures on Quarterly Basis

Quarter	1921	1922	1923	1924	1925	1926
Jan./Mar.	65,463	127,360	96,776	87,609	95,263	94,301
Apr./Jun.			89,493	75,674	104,099	87,109
Jul./Sept.	105,962	155,067	55,621	83,813	99,493	93,793
Oct./Dec.			63,617	92,656	85,789	83,212
Total	171,425	282,427	305,507	339,752	384,644	358,415

Note: The Rubber Association estimates its monthly rubber consumption figures to be 90% complete. Up until 1925 the quarterly figures were likewise estimated to be 90% complete; beginning with 1925 an estimate of 92% completeness has been used. These estimates have been used in raising the figures in this table to 100%. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

Rubber Invoiced to the U. S.

(Reported by American Consuls—Quantities in Long Tons)

During the Week Ended	From Br. Malaya	From Ceylon	From Dutch East Indies	From London & Liverpool	Total
Jan. 8	5,229	1,004	1,337	34	7,604
Jan. 15	6,698	737	1,488	96	9,019
Jan. 22	4,117	1,756	1,508	239	7,620
Jan. 29	6,819	1,080	1,349	197	9,445
Feb. 5	3,187	1,001	1,147	150	5,485
Feb. 12	4,414	327	1,412	753	6,306
Feb. 19	4,284	835	1,309	720	7,048
Feb. 26	5,071	45	1,827	570	7,513
Mar. 5	5,759	2,091	1,536	325	9,711
Mar. 12	6,146	1,352	1,968	198	9,664

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average
1925																																
Jan.	—	39⅜	39⅜	—	39	39	39¼	38½	38⅝	38⅝	—	37⅞	36½	36⅜	35	35⅞	35⅝	34⅞	34⅝	34⅝	35	35½	36¼	36¼	35⅞	35⅝	35¼	35½	—	35	35⅞	36⅜
Feb.	—	35⅜	34⅜	34½	34½	34½	35⅜	—	35⅛	35⅜	35¾	36⅛	35⅞	36⅛	36	36⅛	36⅛	36⅜	36⅜	36⅜	36⅜	—	37⅛	37⅛	37⅛	37⅛	37⅝	38½	—	—	—	36
Mar.	—	38⅜	38⅜	38½	38⅝	39⅛	39⅜	—	39⅝	40	40¼	40⅜	40⅛	40⅜	—	40⅝	40½	41	41⅛	41⅜	41⅜	41⅜	42⅛	42⅛	42⅛	43⅛	43⅜	43½	—	44¼	42¾	41
Apr.	41¼	41⅜	41⅜	41⅜	41⅝	42⅛	42⅜	43¼	43⅜	—	—	44	44⅛	44⅜	44⅜	44⅜	44½	44½	44	44	44	43⅞	43⅞	43⅞	44⅛	44⅛	44⅝	45⅛	45⅜	44⅞	—	43⅜
May	45	47⅛	47⅛	47⅛	46⅞	48⅛	48⅜	50⅜	52½	53⅜	54⅛	59	59⅜	60⅜	60⅜	60⅜	64½	65	65	65⅛	65⅛	65⅜	65⅜	65⅜	65⅜	62⅞	63¼	65⅛	65⅝	69½	—	58½
June	69½	72	74⅜	76½	75⅜	75⅜	75⅞	74⅞	73⅝	74⅝	75¼	76⅜	74⅝	74⅜	71⅜	71⅜	71⅜	72⅜	73⅜	73⅜	75⅛	76¼	65¼	79¼	83½	85⅜	89⅜	89⅜	85⅝	82⅝	85⅝	77¼
July	81½	81⅞	85⅜	—	—	88⅛	90½	95½	94⅜	90⅞	90⅞	106½	105⅝	110⅜	117	—	—	116⅜	118⅜	—	121	117⅜	117⅜	119	117⅜	112¼	107¾	96⅜	93¾	89⅜	93⅜	103⅜
Aug.	94½	—	95½	88⅜	85⅜	86⅜	81⅜	79	—	71¾	72⅛	76½	81½	80⅜	77¾	—	93¾	92⅜	80½	83½	83½	82½	82½	82	85¼	82½	85¼	85½	87½	90	83
Sept.	88¾	87⅜	85	81¾	81½	97	—	97½	99	—	83	86½	92	92⅜	93½	93¾	92	94¾	92	93½	93½	99¼	90	89	89	98	99½	89¾	91½	91½	88⅞
Oct.	91¼	91⅜	92	94½	94½	—	97½	99	99½	101	—	—	97⅜	99	97	99½	95½	99	101¼	102	99¼	99¾	99¾	90	99½	99¾	101½	100¾	98
Nov.	—	99¾	—	98¾	98½	100	100⅛	—	98½	99¼	100¾	101¾	104⅞	105⅝	—	109	107	109⅝	110⅛	110½	110½	110¼	109	106¼	108¼	108⅝	107	104⅞
Dec.	106⅜	108⅛	107⅜	107¼	108¼	—	108	109	109⅜	106	105⅛	105⅞	—	101	99¼	90¼	93	86¼	86¾	—	—	88¼	90¼	88¾	—	—	—	91	91¼	98⅛
1926																																
Jan.	—	—	—	87	—	87¼	86⅛	87½	87⅞	—	88¼	88¼	88¼	85⅛	84⅜	83½	—	75⅛	75⅛	75	73	72	72½	—	68	66¼	67	69¾	70½	69	—	79⅛
Feb.	67	67¼	66¾	66	66	69	—	—	67	65	66	65⅞	—	63	62	60⅜	60	59	60	61¼	—	56	56	55	52	51¾	51	—	—	—	—	62¼
Mar.	55	58	53	53⅜	53⅜	57⅜	56	56	55⅝	61	63	61⅝	60⅜	62	62	60½	62	61	61	61½	61½	61⅛	—	61	60	59⅝	60	—	59½	58½	58	59
Apr.	59	—	59	60	—	59	58	56½	56¼	53	49	51⅜	50⅜	48⅞	47½	48½	47	47	47½	47½	47⅞	47¼	46¾	47	48	48	48	48	49	48½	—	51¼
May	48¾	42	—	50¾	49¾	49¾	49¾	49¼	—	49¼	49	48⅞	47½	47½	47½	—	47	47½	47⅞	47⅞	47¼	46¾	46¾	46	45	45	45	45	42	42	—	47¾
June	41⅝	42	41⅜	42	41⅜	41⅜	41⅛	42	43	41¼	42	43	43⅜	43	43	43	43	43	44	43	43	43	43	43	43	42	42	42	42	42	42	42⅜
July	42	42	42	42	42	41⅜	41½	41⅜	41⅜	41¼	41¼	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜	41⅜
Aug.	—	38⅛	38⅛	—	37	38¼	39	—	38¾	37¾	37½	37⅞	37½	38	38½	38½	38½	38½	39	39	39	41	39½	39½	39	39	39	39	39	39½	40	38½
Sept.	40¼	40¼	40¼	—	—	—	40¼	40¾	40¾	40¼	40¼	40½	40½	40½	40½	40½	40½	40½	40½	40½	41	41½	41¾	42	42	42	42	42	42	42	—	41
Oct.	43	43	—	43¾	43¾	42¾	42¾	42¾	42½	42¾	42¾	42½	42½	42½	42½	42½	42½	42½	42½	42½	42¾	42½	42½	42½	42½	—	42½	42½	42½	42½	—	42½
Nov.	41¼	—	41	41¾	41½	41½	41½	41½	41½	41¾	41¾	41½	41½	41½	41½	41½	41½	41½	41½	42½	42¾	42½	42¾	42½	42½	38	37¾	—	37	37	—	38⅜
Dec.	36¾	37½	37½	37¾	—	37	37	37½	37	37	37½	37½	37½	37½	37½	37½	37½	37½	37½	37½	37½	38½	38¾	38¾	38¾	38¾	39	39	38½	38½	38½	38¼
1927																																
Jan.	—	38½	38½	39	39¾	39¾	40¾	40¾	—	40½	40¾	40¾	40¾	40¾	40¾	40¾	40¾	39¾	39¾	39¾	39¾	39¾	38½	38¾	38½	38½	38¾	38½	38	38	—	38¾
Feb.	37⅞	37½	37½	37½	37½	—	37½	37⅞	37⅞	37⅞	37⅞	37½	37½	37½	37½	37½	37½	38¼	38¼	38¼	38¼	38½	—	38¼	38¾	39	39	39½	—	—	—	38¼
Mar.	39¾	39¾	40	40¼	41	—	40¾	40¾	40¾	40¾	40¾	41¼	41¼	41¼	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾
Apr.																																
May																																
June																																
July																																
Aug.																																
Sept.																																
Oct.																																
Nov.																																
Dec.																																

Average Spot Closing Prices--Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1921

Year	Cents	Year	Cents	Years	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23	1921	16.36

Average Monthly Price per Pound since 1922

Months	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents	1927 Cents
Jan.	18.82	32.73	25.86	36.71	79.50	38.75
Feb.	16.12	35.14	25.29	36.01	62.25	38.25
Mar.	14.53	34.21	22.83	41.00	59.00	
Apr.	15.99	32.48	22.51	43.64	51.25	
May	15.25	27.39	19.89	58.47	47.75	
June	15.11	26.88	18.81	77.26	42.50	
July	14.67	26.10	22.16	103.16	41.03	
Aug.	13.93	28.84	26.17	82.99	38.50	
Sept.	14.44	28.95	27.56	88.88	41.00	
Oct.	19.78	26.93	31.13	98.01	42.50	
Nov.	23.88	27.14	34.33	104.80	38.50	
Dec.	27.42	26.60	37.88	98.51	38.25	
Average for Year	17.50	29.45	26.20	72.46	48.50	

London Closing Prices of Ribbed Smoked Sheet

(In pence per pound)

Fifth Restriction Year—Second Quarter

Day	Feb.	March	April	Day	Feb.	March	April
1	18⅞	19¾		16	18⅞	20⅛	
2	18¾	19¾		17	19	20⅛	
3	18⅝	19¾		18	19¼	20¼	
4	18¾	20		19	19⅜		
5	18¾	20¼		20	—		
6	—	—		21	19¼		
7	18⅞	20¼		22	19¼		
8	18¾	20⅛		23	19⅜		
9	18⅞	20		24	19⅜		
10	18⅞	20¼		25	19½		
11	18¾	20¼		26	19½		
12	18⅞	20⅜		27	—		
13	—	—		28	19⅝		
14	19	20¼		29	—		
15	19	20¼		30	—		
				31	—		

(The average price for the period for which daily prices are reported above is approximately 19.460 pence. The British Colonial Secretary has announced that only 60% of the standard production will be exportable from the restricted area during the next quarter if the price during the entire current quarter does not average at least 21 pence.)

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26	1926-27
Nov.-Jan.	14.285	14.175	17.9983	46.709	19.265
Feb.-Apr.	16.858	12.917	19.356	28.103	
May-June	14.242	10.974	38.469	21.001	
Aug.-Oct.	14.944	14.632	43.269	20.199	

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	Feb. Cents	March	Day of Month	Feb. Cents	March	Day of Month	Feb. Cents	March
1	13.65	14.85	11	14.10	14.20	21	14.00	
2	13.70	14.70	12	——	14.10	22	——	
3	13.80	14.65	13	——	——	23	14.25	
4	14.00	14.50	14	14.00	14.00	24	14.20	
5	14.15	14.50	15	14.20	14.05	25	14.30	
6	——	——	16	14.10	14.05	26	14.40	
7	14.00	14.50	17	14.15	14.00	27	——	
8	14.15	14.45	18	14.20	14.00	28	14.50	
9	14.25	14.25	19	14.10		29	——	
10	14.15	14.35	20	——		30	——	
						31	13.55	

Average Monthly Price Per Pound

Month	1925 Cents	1926 Cents	1927 Cents	Month	1925 Cents	1926 Cents	1927 Cents
Jan.	23.99	20.85	13.42	Aug.	23.72	18.57	
Feb.	24.70	20.60	14.10	Sept.	23.79	17.02	
Mar.	25.64	19.35		Oct.	21.77	13.14	
Apr.	24.54	19.13		Nov.	20.94	12.86	
May	23.41	18.92		Dec.	20.06	12.68	
June	24.13	18.57		Average for Year	23.45	17.53	
July	24.68	18.71					

Stock of Crude Rubber in the U. S.

(All Quantities in Long Tons)

At End of	ON HAND			AFLOAT			ON HAND AND AFLOAT		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	60,870	55,198	76,172	36,759	46,296	45,312	97,629	100,434	121,484
Feb.	54,109	58,035	91,186	41,475	46,935	42,166	95,584	104,970	133,352
Mar.	52,494	61,822		40,577	43,567		93,071	105,389	
Apr.	50,143	55,261		53,465	41,905		103,608	97,166	
May	52,064	64,360		46,846	40,303		98,910	104,663	
June	50,997	60,460		51,202	40,907		102,199	101,367	
July	46,245	64,900		46,003	38,062		92,248	102,962	
Aug.	42,354	60,870		41,254	37,360		83,608	98,230	
Sept.	36,367	62,078		55,151	42,464		91,518	105,542	
Oct.	34,085	64,989		51,098	52,930		85,183	117,919	
Nov.	34,885	69,385		42,692	47,311		86,577	116,696	
Dec.	51,215	72,520		48,208	52,020		99,423	124,540	

(Rubber Association of America figures raised to 100%.)

Stock of Crude Rubber in London

(No. of tons in Wharves and Warehouses, including Latex)

At End of:	1920	1921	1922	1923	1924	1925	1926
January	19,300	56,573	67,252	73,498	57,460	27,172	9,994
February	18,329	59,439	67,023	70,483	56,732	23,425	10,004
March	18,969	63,913	66,670	63,438	55,647	18,104	13,750
April	20,072	68,759	68,637	58,770	54,559	12,949	18,951
May	20,921	70,403	70,146	54,439	51,615	5,895	20,896
June	22,517	69,408	71,597	51,050	51,115	5,318	23,894
July	25,346	71,065	71,515	49,937	52,073	4,258	27,727
August	30,674	73,211	72,112	48,427	49,700	4,619	30,764
September	35,504	72,175	70,977	54,523	44,011	5,453	35,077
October	41,743	69,229	68,536	58,891	37,523	5,086	42,141
November	45,550	70,786	68,548	60,074	33,593	3,869	44,057
December	50,652	69,792	72,299	60,246	29,488	5,697	48,921

At End of Recent Weeks

1926	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
July	25,063	26,063	26,732	27,860	27,766
August	27,972	29,313	29,678	30,159	——
September	30,764	32,011	33,249	34,587	——
October	36,065	37,226	39,650	41,080	42,141
November	43,045	43,299	44,553	43,859	——
December	44,395	46,349	47,324	48,382	——
1927					
January	48,948	50,756	52,484	53,652	54,786
February	55,740	56,939	56,962	58,659	——
March	59,945	61,516			

Rubber in Singapore and Penang

(Stocks held by Dealers—Quantities in Long Tons)

End of	1925	1926	1927	End of	1925	1926	1927
Jan.	15,925	15,726	25,440	July	15,894	23,101	
Feb.	17,320	13,653	26,766	Aug.	17,251	23,362	
Mar.	17,261	18,389		Sept.	16,526	25,997	
Apr.	15,368	16,328		Oct.	15,346	26,614	
May	15,804	16,967		Nov.	19,788	25,486	
June	15,884	19,416		Dec.	18,840	26,443	

Rims Inspected and Passed in U. S.

(Tire & Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1923	23,140,620	0.6	1925	25,997,849	66.8
1924	21,863,720	19.7	1926	24,199,613	78.8
1926			1927		
July	2,123,368	84.8	January	1,489,078	77.0
August	2,378,850	82.3	February	1,753,224	84.4
September	2,365,518	80.7	March		
October	1,828,539	76.9	April		
November	1,210,472	77.0	May		
December	1,096,429	76.7	June		

U. S. Consumption of Gasoline

(In Barrels of 42 Gallons)

MONTHS	1924	1925	1926	1927
January	11,918,000	14,386,000	17,582,000	17,888,000
February	9,626,000	13,210,000	15,814,000	
March	10,961,000	14,890,000	19,302,000	
April	14,583,000	19,013,000	20,848,000	
May	15,889,000	20,459,000	24,213,000	
June	16,421,000	20,724,000	23,803,000	
July	18,610,000	22,879,000	24,752,000	
August	19,825,000	22,323,000	26,912,000	
September	16,871,000	20,177,000	22,929,000	
October	18,029,000	19,826,000	23,973,000	
November	16,607,000	18,024,000	20,618,000	
December	15,663,000	17,954,000	21,419,000	
TOTAL	185,003,000	223,865,000	262,165,000	

U. S. Tire and Tube Statistics[1]

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	40,932	45,259	51,633	60,845	61,237
Shipments	39,987	45,204	50,120	59,262	59,002
Inventory[2]	6,132	5,772	7,427	8,142	10,456

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	4,740	4,587	4,965	4,013	2,974	4,932	7,949	9,947	10,432
Feb.	4,908	4,865		3,924	3,436		8,928	11,164	
Mar.	5,276	5,456		4,657	4,561		9,510	12,004	
Apr.	5,341	5,346		5,498	4,980		9,088	12,461	
May	5,467	5,023		5,954	5,211		8,611	12,343	
June	5,418	5,422		6,737	5,724		7,243	11,968	
July	5,587	4,950		6,298	6,337		6,421	10,592	
Aug.	5,607	5,872		4,760	6,744		7,261	9,732	
Sept.	5,007	5,706		4,569	6,040		7,681	9,318	
Oct.	4,505	5,103		5,580	4,544		6,670	9,917	
Nov.	4,229	4,324		3,671	3,733		6,955	10,297	
Dec.	4,760	4,683		3,601	4,718		8,142	10,456	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	50,850	60,116	70,706	82,614	76,618
Shipments	49,673	59,072	68,016	81,004	71,591
Inventory[2]	7,643	8,425	11,052	11,313	16,290

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	6,343	6,809	5,337	5,576	3,723	6,016	11,570	14,361	15,585
Feb.	6,339	6,825		4,971	3,736		13,023	17,090	
Mar.	7,000	7,030		5,711	4,987		14,236	19,131	
Apr.	6,851	6,554		6,704	5,051		13,618	20,674	
May	6,846	6,149		8,040	6,304		12,501	21,141	
June	6,942	6,171		9,032	6,898		10,409	20,243	
July	7,544	5,729		9,140	8,569		8,635	17,267	
Aug.	7,618	7,424		6,923	9,579		9,271	15,462	
Sept.	7,254	7,590		6,665	7,762		9,950	15,312	
Oct.	6,612	6,208		7,845	5,474		8,726	15,929	
Nov.	6,266	4,852		5,406	4,045		9,491	16,604	
Dec.	6,999	5,277		4,991	5,463		11,313	16,200	

(1) Rubber Association of America figures, raised to 100%. The Association estimates its figures to be 75% representative or complete when issued and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	Passenger Cars			Trucks		
	Total	United States	Canada	Total	United States	Canada
1920	1,883,158	1,799,522	83,636	322,039	311,531	10,508
1921	1,514,000	1,452,902	61,098	147,550	142,402	5,148
1922	2,397,827	2,302,923	94,904	251,434	244,285	7,149
1923	3,719,164	3,589,936	129,228	378,288	361,078	17,210
1924	3,262,764	3,144,999	117,765	378,106	360,625	17,481
1925	3,817,639	3,678,328	139,311	498,019	475,941	22,078
1926						
January	284,703	272,922	11,781	33,461	29,763	3,698
February	334,524	319,763	14,761	41,685	37,608	4,077
March	399,105	381,116	17,989	49,233	44,848	4,385
April	401,836	383,907	17,929	53,887	50,314	3,573
May	394,569	373,140	21,429	51,343	47,838	3,505
June	358,360	339,542	18,818	47,043	44,110	2,933
July	328,816	315,863	12,953	41,847	39,592	2,255
August	393,040	380,258	12,782	47,907	45,404	2,503
September	363,537	350,913	12,624	51,299	46,428	4,871
October	300,142	289,547	10,595	46,965	42,890	4,075
November	226,278	219,504	6,774	39,410	36,356	3,054
December	143,413	137,361	6,052	30,002	28,302	1,700
TOTAL	3,928,323	3,766,336	161,487	534,082	493,453	40,629
1927						
January	208,718	196,973	11,745	40,800	37,169	3,631
February		260,330			38,029	
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

Exports of Crude Rubber from Principal Producing Countries

(*Figures in Long Tons*)

	BRITISH MALAYA[1]								DUTCH EAST INDIES[2]							
	Gross Exports	*Gross Exports minus Imports*	*Ceylon*[3]	*India & Burma*[3]	*Sarawak*[4]	*British North Borneo*[3]	*Siam*[4]	*Java & Madura*	*Sumatra E. Coast*	*Other D.E.I.*	*Fr. Indo-China*[3]	*Amazon Valley*[5]	*All Other*[5]	*World Total*[7]
1923	252,016	70,432	181,584	37,113	6,416	5,705	4,237	1,718	32,938	48,402	43,422	5,606	19,127	7,856	404,123
1924	259,706	108,524	151,182	37,351	7,697	6,699	4,621	2,962	42,446	53,483	80,347	6,688	22,906	9,065	425,447
1925	316,825	158,022	158,803	45,684	10,082	8,413	5,424	5,394	46,643	62,678	119,271	7,881	24,079	13,797	508,149
1926:															
Jan.	30,452	10,237	20,215	4,058	1,273	416	472	289	4,397	6,277	8,081	915	1,697	1,805	49,895
Feb.	30,440	8,306	22,134	4,941	725	488	450	253	4,474	5,734	6,801	554	2,169	1,978	50,701
Mar.	35,012	14,800	20,212	5,708	1,113	792	561	418	4,865	5,612	11,880	573	2,395	1,899	56,028
Apr.	23,727	10,565	13,162	3,484	590	679	374	293	4,522	4,598	6,208	410	1,778	1,529	37,627
May	31,231	10,604	20,627	3,600	691	927	410	279	4,742	5,293	8,606	502	2,144	1,464	49,285
June	30,624	11,764	18,860	3,906	452	779	512	275	5,440	6,111	9,844	549	1,367	1,279	49,374
July	28,824	15,280	13,544	4,800	938	911	420*	439	4,929	5,523	12,864	1,521	1,246	1,148	48,282*
Aug.	34,625	13,595	21,030	5,246	521	890	420*	316	4,418	3,472	10,349	378	1,411	1,097	49,548*
Sept.	35,913	13,972	21,941	6,027	652	888	420*	457	4,326	6,757	10,971	681	1,463	822	55,405*
Oct.	39,367	15,203	24,164	6,026	635	805	420*	385	4,193	6,988	11,513	661	1,616	1,023	58,429*
Nov.	34,302	12,201	22,101	4,687	1,111	685	420*	285	4,060	5,746	8,998	718	1,500*	1,000*	51,311*
Dec.	36,811	14,716	22,095	6,361	1,177	895	420*	338	5,025	7,106	12,333	790	1,500*	1,000*	59,040*
	391,328	151,243	240,085	58,844	9,878	9,155	5,299*	4,027	55,391	69,216	118,448	8,252	20,286*	16,044*	614,925*
1927:									4,184	6,705	10,541	941			
Jan.	34,946	14,995	19,951	6,697	922							675			
Feb.	27,528	11,607	15,921												
Mar.															
Apr.															
May															
June															
July															
Aug.															
Sept.															
Oct.															
Nov.															
Dec.															

(1) Malayan net exports cannot be taken as production since imported rubber is largely wet native rubber which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, and 3,263 in 1926. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons 1924, 6 tons 1925, and about 20 tons in 1926. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, and about 60 tons in 1926. In 1926, 196 tons of latex sprayed rubber and 125 tons of ficus rubber were exported from Java and Madura. (6) Calculated from official import statistics of principal consuming countries; viz., United States, United Kingdom, France, Germany, Italy, Belgium, and Netherlands. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown immediately it becomes available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(*Long Tons*)

	United States	*United Kingdom*	*France* (abd)	*Germany*	*Canada* (ac)	*Japan* (ac)	*Italy*	*Russia* (ce)	*Australia* (cf)	*Belgium* (d)	*Netherlands*	*Sweden* (abcd)	*Norway* (abc)	*Denmark* (abd)
1919	236,977	42,671	19,951	5,584	8,770	10,688	9,894	75	733	3,995	2,771	2,022	437	678
1920	248,762	56,844	15,868	11,890	11,912	6,015	6,123	62	1,040	3,840	5,510	1,567	241	479
1921	179,678	42,087	16,981	21,920	8,248	22,981	3,906	165	554	1,705	1,022	813	178	251
1922	296,267	11,724	27,644	27,546	9,366	16,449	6,430	2,453	2,649	172	-3,807	1,248	321	67
1923	300,372	12,700	31,067	18,519	13,299	17,181	8,489	4,506	1,631	2,184	792	1,391	448	354
1924	317,747	-11,550	34,488	22,727	14,420	19,612	8,764	824	3,127	2,688	-807	1,781	669	473
1925	381,815	4,061	36,911	33,937	19,825	12,743	11,412	7,088	4,217	2,930	875	1,690	701	440
1925:														
January	31,736	-284	2,147	4,303	1,432	797	552	333	192	331	109	164	64	16
February	23,717	-2,492	3,529	3,690	1,278	658	908	1,000	338	275	88	138	145	37
March	31,727	-3,396	3,924	2,784	2,349	689	1,463	1,083	357	373	56	183	77	71
April	31,376	-2,961	3,069	3,574	1,397	719	817	535	314	97	181	149	47	23
May	35,729	-8,650	3,223	3,834	1,532	863	1,060	1,999	385	228	47	126	47	16
June	30,371	619	2,387	3,239	1,681	2,095	1,506	59	378	329	120	97	43	74
August	32,281	3,825	1,109	2,942	1,582	786	650	16	341	176	28	114	45	34
July	31,177	2,204	1,827	2,606	1,613	813	631	85	297	169	76	119	53	35
September	25,213	5,369	4,633	2,667	1,202	936	939	234	429	283	136	103	54	30
October	33,519	1,203	3,039	2,325	1,799	1,060	914	21	243	255	60	159	38	38
November	36,150	2,466	4,654	1,260	1,713	2,140	1,157	190	512	326	-12	219	55	53
December	38,819	6,158	5,370	713	2,248	1,187	815	1,533	431	178	-14	122	33	35
1926:														
January	40,345	6,886	3,170	703	2,188	892	760	332	358	76	154	123	46	51
February	31,435	3,114	3,513	1,113	1,881	741	1,041	643	432	143	89	171	82	94
March	40,316	8,907	4,790	1,342	2,079	864	1,037	832	469	129	227	213	81	55
Apr.	33,416	8,275	4,834	1,781	1,624	1,868	865	402	431	71	93	204	27	23
May	28,705	6,773	2,937	1,848	1,239	1,010	705	200	386	186	241	110	24	47
June	23,795	5,894	2,327	1,655	1,188	1,465	1,070	983	546	269	214	178	20	34
July	34,266	6,768	2,603	2,202	1,552	1,447	800	132	586	295	480	195	34	27
Aug.	26,081	7,327	2,819	2,110	1,888	1,284	796	655	1,159	303	596	199	52	55
Sept.	35,675	8,843	2,900	2,029	1,355	1,922	819	472	1,125	283	430	159	43	27
Oct.	28,110	8,082	2,962	2,423	1,865	2,396		585	869	301	2	210	68	43
Nov.	37,673	9,247	3,194	3,007	1,548			568		194	-18	179		50
Dec.	35,850	4,749			1,846			725			157	184		
	395,667	84,865			20,253			6,529			2,665	2,125		

a—Including gutta percha. b—Including balata. c—Reexports not deducted. d—Believed to include scrap and reclaimed rubber. e—Russian statistics are exports from United Kingdom only to Russia. f—Australian annual statistics including 1924 are exports to Australia from Malaya, Ceylon, Dutch East Indies and United Kingdom; monthly figures and total for 1925 are exports from Malaya, Ceylon, and Java only. -Minus sign, reexports in excess of imports. *All statistics from original official trade returns.*

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REVIEW DESK

MANAGERS AREN'T BORN. By P. W. Litchfield, president, The Goodyear Tire & Rubber Co. Published in the March issue of *System*.

When an organization grows to be as large as the Goodyear Tire & Rubber Co. the chief executive must train his key men to build subordinates for big tasks—tasks he can no longer personally supervise himself. It is the author's conviction that a man who goes to a new job simply because it offers a larger salary or greater responsibility, cannot usually have the same feeling toward it as the man who has grown up with the company, but he admits that the rule has a few exceptions.

He relates the theory back of the organization of the Flying Squadron and the Goodyear Industrial University. He points out that the company cannot make executives, but that it can help them to make themselves by selecting carefully, encouraging and giving them the opportunity of discovering their capabilities by facing difficulties. Mr. Litchfield stoutly maintains that the old idea of a boss who does not dare to let the employees under him find out anything about the work for fear they might get his job, has no place in the modern theory of organization building.

• • • •

HOW IT FEELS TO LOSE A FORTUNE. By Harold C. Burr. Brooklyn *Eagle*, Brooklyn, N. Y. **Feb. 13, 1927.**

The author failed to do justice to his material in writing this feature article around the life of Francis R. Henderson, president of both the Rubber Exchange of New York, Inc. and Henderson, Helm & Co. When one begins to read he soon discovers that there is no attempt to live up to the catchy title. The author has tried to color his material against a background too broad for the space at his disposal. He devotes too many words to Mr. Henderson's boyhood and not enough to the way he lost a fortune.

The inception and founding of the Rubber Exchange are too scantily treated, for had the author treated this subject in the way it deserves, the result would have been an article far more interesting than the one he has achieved, not only from the subject's viewpoint, but from that of the average newspaper reader.

All the facts contained in the article are interesting in themselves, and as far as this reviewer is able to judge, accurate, but the reporter has erred in emphasizing facts that were worth only small consideration and in neglecting to give others the full treatment any reader would desire. Yet, from this not so well written short biography, the reader gains the impression that Mr. Henderson's business adventures, if narrated by a skillful writer, would be as intensely interesting to his contemporaries as a good novel.

• • • •

THE ALTERNATING BEHAVIOR OF FATTY ACIDS ADDED TO RUBBER COMPOUNDS. By W. H. Smith and C. E. Boone, National Bureau of Standards. Published in the March issue of *Industrial & Engineering Chemistry*.

Normal straight-chain fatty acids from formic to stearic were added to blanket or rolled brown crepe and pale crepe to determine their relative properties as accelerators when used in connection with zinc oxide. The compounds were cured in slab form in sheets approximately one-sixteenth of an inch thick, using aluminum molds. The time of cure was varied by 10-minute increments from an undercured to an overcured compound. Tests of tensile strength were made 24 hours after vulcanization.

The results represent an average of three determinations of tensile strength, and are shown by the authors in graphic form. The authors conclude that fatty acids dissolved in rubber presumably in the form of their zinc salts show an alternation in behavior with respect to the tensile strength at break similar to that observed by Bayer for the melting points of these acids and similar to the observations of Garner and Randall on their heats of crystallization.

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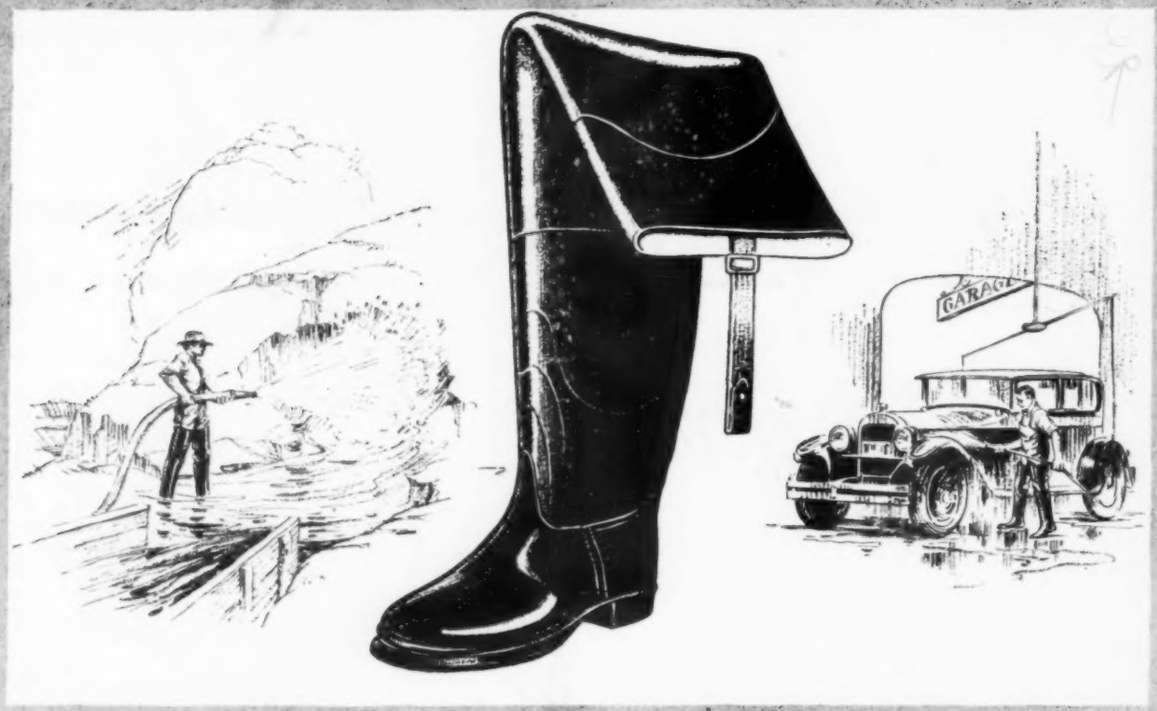

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